

Legal Issues of Drones used by Law Enforcement Agencies

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I. Introduction

In March 2013, Michael Bloomberg, the former Mayor of New York City presented his ideas on using unmanned surveillance drones for the enforcement of surveillance systems to make a safer city. This idea was criticized, because excessive surveillance systems can infringe on citizens' privacy. However, Bloomberg said that having surveillance drones is not very different than having surveillance cameras on buildings, and that establishing a surveillance system of high-technology for the expansion of social safety is an inevitable change.

After three years, since the controversial comment of Bloomberg, drones are becoming miniaturized and popularized by the development of sensor and battery technology. Due to the mass production of low price manufactures, drones are used in different areas. Recently there has also been a case where a drone was used to smuggle drugs into prison. On the other hand, in 2014 the Korea Institute of Science & Technology Evaluation and Planning (KISTEP) selected the subminiature flying surveillance robot as one of the promising technologies contributing to future safe society. In the future, drones will also be widely used in crime prevention and investigation. This paper will discuss the legal issues of drones used by law enforcement agencies.

II. Utilization and Regulation of Drones

1. Definition and Utilization Area of Drones

(1) Definition of Drones

A drone is an unmanned aircraft, operated from long distance by a control system or by a pre-entered computer programme, with autonomous flying abilities and the possibility to change course in air. A drone, also called an unmanned aerial vehicle, features remoteness and automaticity. The Korean Aviation Act defines unmanned aircraft as "an aircraft capable of being flown autonomously by remote control without an onboard pilot."

(2) Utilization Areas

Drones which were invented after the First World War for military purposes showed remarkable development through the Vietnam War under the United States. Recently,

the use of drones has spread to the private sector such as aerial photography or leisure and also removing smog or making artificial rainfall. Also, drones are becoming specialized for delivery of merchandise such as Amazon Prime Air. There are attempts to use drones for pizza delivery or serving food in restaurants.

2. Related Issues and Current Regulations

(1) Related Issues

1) Infringement of Legal Interest by Crash or Collision

First, if a drone crashes or collides with another object it can infringe on the life, body or property of people on the ground. To minimize such damage, it is important to specify the technical standard and flight area of drones and operator qualifications.

2) Infringement of Constitutional Rights such as Privacy

Illegal surveillance or detection using drones can infringe on privacy. Also, leakage of videos filmed by drones can infringe on personal information. On the other hand, drones can cause noise pollution and infringe on the right to view of residents. Especially because drones are operated in lower altitude than manned aircraft, drones can infringe on the air dominion of land or building owners and because of this the flight altitude of unmanned aircraft has become a major issue of debate.

3) Problems of Communication Disorder

Communication signals of drones can cause network disorder in civil communication networks such as cellphones and satellite TV. In addition, if communication disorders occur between drones and ground control centers, it can cause great risks of midair and ground collision. If such accidents occur, there will be problems clarifying the matter of responsibility regarding civil and criminal cases including compensation for damages.

(2) Current Regulation

1) Regulation Method

Law regarding unmanned aircraft can be improved in many ways. Currently, Korea has added regulations on unmanned aircraft in the existing Aviation Act regulating manned aircraft. However, due to the many differences between unmanned aircraft and manned aircraft regarding characteristics, size and operation method, it is more appropriate to regulate through separate laws.

2) Requirement of Unmanned Aircraft Equipment

In Korea, an unmanned flying equipment which is part of ultra-light flying equipment is an unmanned flying equipment that weighs 150 kilograms or less, in exclusion of the weight of fuel, or an unmanned aircraft that is 20 meters long or less, weighs 180 kilograms or less, in exclusion of the weight of fuel (Enforcement Regulation of Aviation Act Article 14 Section 6).

3) Ownership and Operation Requirements

(1) Reporting and attaching filing number

Any person who owns any ultra-light plane shall file a report on the kind, use, name of the owner etc. of such equipment with the Minister of Land, Infrastructure and Transport and attach the filing number to such equipment after such number is issued by the Minister of Land, Infrastructure and Transport (Aviation Act Article 23 Section 1). However, ultra-light flying equipment used for military purposes or unmanned aircraft that weighs 12 kilograms or less, in exclusion of the weight of fuel, are not required to report or attach filing number (Enforcement Decree of the Aviation Act Article 14).

(2) Operation Requirements

Any person who desires to fly an ultra-light plane in the aerial zone publicly notified by the Minister of Land, Infrastructure and Transport shall obtain prior flight approval from the Minister of Land, Infrastructure (Aviation Act Article 23 Section 2). Any person who desires to fly an ultra-light plane shall obtain certification (Aviation Act Article 23 Section 3), no person entitled to own or use an ultra-light plane shall use it for profit, but a person is allowed to use in aircraft leasing service, business using ultra-light planes, air leisure sport business etc. if an insurance policy or mutual aid has been purchased (Aviation Act Article 23 Section 5).

4) Operator Observances

The operator of an ultra-light plane shall comply with matters to be observed prescribed by Ordinance of the Ministry of Land, Infrastructure and Transport in operating the ultra-light plane to prevent harm to human lives or property (Aviation Act Article 23 Section 8). First, (1) act of dropping an object with the possibility of risking human life or property, (2) act of flying over a densely populated area or other places of many people with the possibility of risking human life or property, (3) act of flying at night, after sunset and before sunrise, (4) act of flying in a condition affected by alcohol or drinking alcohol during flying is prohibited (Enforcement Regulation of Aviation Act Article 68). Also, the operator must fly the aircraft or ultra-light plane after identifying it with his/her own eye to be able to avoid it. The operator must fly the unmanned aircraft equipment within the range of his/her sight.

III. Use of Drones by Law Enforcement Agencies

1. Possible Areas of Utilization

(1) Emergency Dispatch

Law enforcement agencies such as the police can place drones in emergency dispatch duties. Drones can be sent to various emergent scene of accident, take pictures of the situation and send the photos so that the police can prepare appropriate measures. Mini drones have high utilization rate because they can fly in the air and move

swiftly without being affected by traffic, have a wide range of vision and equipment purchasing costs are low.

(2) Public Safety Duty

Drones can replace patrolling duties of the police, It is possible to increase the efficiency of patrolling duties and place the previous patrolling manpower in other necessary positions by placing unmanned equipment in patrolling duties, police work of high fatigue level.

(3) Traffic Information Collection

Drones can also be used in traffic information collection. Currently, Korea is collecting traffic information through fixed CCTVs. While CCTVs have problems of high installation expenses and blind spots, mini drones can be widely used due to low price of equipment, possibility to secure wide angle of sight and possibility of quick responses. In the past, helicopters were used in controlling bus-only lanes or collecting traffic information of mountainous regions. If drones are used in these cases, same work will be possible with low cost and high efficiency.

(4) Criminal Investigation

Self-driving cars or drones can be used by investigative authorities in finding and tracing criminals and collecting and preserving evidence. Especially, drones can be used to observe suspects or site, such as observing and taking pictures, which was previously done with the naked eye or telescope.

2. Examples of Utilization and Legislation

(1) Examples of Utilization

In the United States drones are used in demonstrations and searching for suspects. In November 2014, in Atlanta, Georgia, there was a demonstration against a policeman who fatally shot a black man, and a drone was used to take pictures of the marching demonstrators. Also, the pictures taken by drones were used as evidence in the process of arresting and on trial of law violators of the demonstration. In May 2015, in Middleton, Wisconsin, the police used drones to search suspects who have escaped into the wetlands. In Arlington, Texas, the police used drones to quickly understand traffic accidents and scenes of shooting incidents.

In Korea, there were also cases of drones used by the police to support patrolling or lifesaving duties. In July 2015, two drones were used to secure the safety of summer vacationers at Haeundae beach, Busan. However, the project failed just after three days when the drone crashed because of an accident of unknown cause. Also, in March 2015, the police attempted to use drones for searching missing persons, but because of the limited flight time of 30 minutes, the implementation of a public order service using drones was temporarily postponed.

(2) Examples of Legislation

Originally drones were developed for military purposes, but the utilization scope is gradually expanding. Law enforcement agencies such as the police and prosecution are searching for ways to use drones for crime prevention and investigation. However, if law enforcement agencies indiscriminately use drones, problems such as invasion of privacy or personal information collection and management can occur. In the United States, legislation controlling the use of drones by law enforcement agencies is being prepared separately by each State. Beginning in Florida, where the first laws on the regulation of the use of drones by law enforcement agencies were prepared, as of November 2015, a total of 16 States have completed legislation on the use of drones by law enforcement agencies.

VI. Legal Characteristics of Investigation Using Drones and Institutional Improvement Plans

1. Legal Characteristics of Investigation Using Drones

(1) Considerations for Determining Legal Characteristics

To determine the legal characteristics of unmanned operated machines used in criminal investigation, it is necessary to understand the characteristics of the machine and the type of work it has been put into. There is controversy over whether searching a house with a drone without a warrant should be allowed or not, and to judge such situations, it is important to consider the features of drones and the characteristics of the duty.

(2) In Real-time Observation

It is not taking pictures or filming videos using drones installed with cameras, but using drones for real-time observations like using a telescope or the naked eye. In this case, observing outside a house using unmanned operated machine is essentially not very different from an observation using high-end telephoto lenses from long distance. However, using drones can solve the problems of blind spots through wide viewing angles and also close-up observation, and possibility of infringement of privacy is very high.

(3) Taking Photographs and Videos

If a picture or videos are taken by installing a camera on an unmanned operated machine, to determine the legal characteristics, discussion on whether taking pictures in Criminal Procedure Act is voluntary investigation or compulsory investigation can be applied. As scientific technology is advancing, new investigation methods such as monitoring or taking pictures have appeared, violating personal privacy. Following, the interpretation to classify the difference between voluntary investigation and compulsory investigation has changed. Originally, the concept of compulsory disposition was understood by the physical legal force or legal obligation. Recently, compulsory

disposition is interpreted on whether it was violated important right or benefit. Taking pictures does not impose physical legal force or legal obligation on the subject. It can be understood that it could have been taken through quick and secret ways, the person involved unaware of the act. However, if it violated the right of the person involved and caused significant results in criminal procedure, it cannot be interpreted as voluntary investigation. For example, the legal characteristic of filming with drones of visual equipment should be understood as compulsory investigation.

2. Institutional Improvement Plans

(1) Request for Judicial Control

If drones are used in investigations, not only the privacy of the subject but also people around unspecified masses can be violated and judicial control is necessary. However, just like communication monitoring, for the secrecy of the investigation, the general warrant execution procedure cannot be applied. In other words, if there is permission from court with the necessary legal requirements for unmanned operated machines such as drones should be permitted in investigation procedures. In the case of investigation using drones, we can consider taking measures to give a notice including the fact of using drones, the enforcement agency and the period of enforcement to the person subject to drone monitoring within a certain period after the date that the prosecutor decides to charge or not to charge a suspect with a certain offense.

(2) Principles of Warrant Requirement and Exceptional Regulations

To permit the police or prosecution to use drones which can infringe on personal right and benefit, the principles of warrant requirement must be followed. To utilize drones in criminal investigation, the type, purpose, subject, scope, period of time, location of execution and method must be stated on the warrant. On the other hand, drones have a wide viewing angle, can easily access areas where people cannot reach and therefore can be effectively used for searching missing persons or suspects. To prevent emergent risks or when there are risks of suspect escape or destruction of evidence, drones should be permitted to use without preliminary warrant.

(3) Information Protection Etc.

When recordings are made from wide viewing angles it is basically impossible to record a certain area or person. Therefore, it is difficult to set a certain limit from the information collection stage for personal information protection. Thus, in the information management stage where collected information is treated, the principle of information protection must be strictly established. First, to restrict unlimited information collection and retention, the information retention period needs to be limited. Also, the information collected and managed by drones, number and use of equipment by law enforcement agencies, related reporting system establishment and release of information need to be specified.

V. Conclusion

In March 2016, artificial intelligence AlphaGo, developed by Google DeepMind beat Sedol Lee, a professional Go player of 9 dan rank. The Korean society was shocked by the results of the game and the aftereffects of AlphaGo are still continuing. The Fourth Industrial Revolution is imminent, led by artificial intelligence, robot technology and biotechnology. There is rosy prospect that such development of new technology will bring convenience and safer world to mankind. On the other hand, there are also worries of a dystopian future where the free will of people is undervalued and closely monitored. Meanwhile, the awareness of human rights is increasing and every time new technology is introduced in criminal justice there is controversy over invasion of privacy. It is a task of criminal policy to analyze the characteristics and utilization purpose of the technology, evaluate the possibility of application and find the balance between privacy protection and institutionalization. Countermeasures in the field of criminal justice should take an initiating role so that future development of technology can be more beneficial in people's lives. I hope this paper has become an opportunity to consider the criminal policy directions preparing for the Second Machine Age where mankind and machines coexist.

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