

ARRANGEMENTS FOR USE OF DRONE IN INDONESIA SEEN FROM INTERNATIONAL LAW

Luh Putu Sudini, Law Universities Warmadewa Denpasar
I Nyoman Putu Budiarta, Law Universities Warmadewa Denpasar

ABSTRACT

The development of technology and science which is getting faster nowadays, seems to be happening all over the world, including in Indonesia, especially in the improvement of technology such as the formation of unmanned aircraft known as “drones”. The increasingly widespread development of drone technology adds to the function of use in everyday life, even in the context of defense and security. The acquisition of efficiency is one of the driving forces for the development of the function of using drones in various dimensions, both land, air and sea. Problem : How to Arrange Drone Operations in Indonesia. The method used is : normative legal research methods. Drone is : a flying machine that functions remotely by the pilot or is able to control himself using the laws of aerodynamics. The results of the study pay attention to the regulations regarding the operation of unmanned aircraft in airspace served by Indonesia, which are still in the form of a Ministerial Regulation, appear weak and less firm in sanctions against drone misuse, and also if we look at the legal binding capacity of the Ministerial Regulation is still weak compared to the form of the Law as a provision of Positive Law in Indonesia under the 1945 Constitution and Pancasila. So that Indonesia needs to establish a drone operating arrangement with the Law as a positive national law in Indonesia. To create clear and definite legal protection and be able to provide flight security and safety against possible (hazards) caused by the operation of unmanned aircraft and to accommodate the development of unmanned aircraft technology. Indonesia has a Law that regulates the Operation of Unmanned Aircraft or Drones separately which is able to provide protection and legal certainty for Indonesian citizens and foreign countries operating drones in Indonesia’s sovereign Airspace. Arrangements for drone operation in Indonesian airspace are also aligned with the provisions in International Law regarding drone operation.

Keywords : Usage Settings, Drone, International Law

INTRODUCTION

The development of technology and science which is getting faster nowadays, seems to be happening all over the world, including in Indonesia, especially in the improvement of technology such as the formation of unmanned aircraft known as “drones”. The increasingly widespread development of drone technology adds to the function of use in everyday life even in the framework of defense and security. The acquisition of efficiency is one of the driving forces for the development of the function of using drones in various dimensions, both land, air and sea (Putra & Hakim, 2016). In addition to cost efficiency, efforts to avoid casualties are obtained, with the presence of drones, the casualties in combat can be reduced.

The development of science and technology in Indonesia is currently growing rapidly, from the very beginning to take videos or pictures using a camera. Until now there have been drones that can help take pictures and videos from a distance. Based on the above background, there is a problem formulation, namely how are drone operational arrangements in Indonesia?

METHOD

At this writing, using the Normative legal research method (Van Hoecke, 2016). That is, a process to find legal rules, legal principles, and legal doctrines in order to answer legal issues

at hand. As normative legal research, it will use legal materials such as primary, secondary, and tertiary legal materials. Research analysis using qualitative analysis

- Descriptive. So that conclusions can be obtained on problems that are good, precise, correct, logical, and scientific (Taekema 2018).

RESULTS AND DISCUSSION

Unmanned aircraft or known as “drones” is : a flying machine that functions remotely by the pilot or is able to control himself using the laws of aerodynamics (Hassanalian & Abdelkefi, 2017). Unmanned aircraft, also known as drones and/or Unmanned aircraft or Unmanned Aerial Vehicles (UAV). As for what is meant by drones according to Ann Cavoukian, namely Unmanned Aerial Vehicles is an aircraft that flies under the control of an operator with no person aboard,(Cavoukian, 2012). while according to Ruwantissa Abeyratne calls Unmanned Aircraft (UA) is a pilotless aircraft capable of flying autonomously or semi autonomously with some pilot assistance from a remote station (Abeyratne, 2014). Unmanned aircraft or drones controlled by computer or remote control. This tool has a camera that can be used to take long distance pictures. In addition, drones can also function to carry payloads such as weapons, and so on. Along with the times, drones are widely used by various groups both for shooting needs and for work needs. Operation of unmanned aircraft can use the Visual Line-of Sight (VLOS) principle and/or the Beyond Visual Line-of Sight (BVLOS) principle. However, the operation of unmanned aircraft is prioritized using VLOS principles. Some of its uses, such as for vlogs, traveling videos, and so on. Furthermore, the operation of unmanned aircraft with the BVLOS rules is used if it meets the following conditions: (Fang, O’young & Roll, 2018).

- 1) Unmanned aircraft have a Detect and Avoid (DAA) capability which is used to ensure that the operation of unmanned aircraft doesn’t interfere with aircraft operations or detect dangerous meteorological conditions and the presence of obstructions or obstacles.
- 2) Has tracking system capabilities to facilitate monitoring of unmanned aircraft operations.

Unmanned aircraft, can be operated in residential areas and not residential areas, with the following information: (Murray & Chu, 2015).

- a) In residential areas, the aspects of the operating height must meet the safety aspects and don’t endanger people and/or property objects in the operating area; have and are willing to bear guarantees for third party losses caused by the operation of unmanned aircraft; obstacle condition; availability of an area for emergency landing; the ability and procedures to stop the operation of unmanned aircraft in the interests of safety and security; and has a flight path that has been determined and approved by the Director General of Civil Aviation.
- b) In the non-settler area, at least the aspects of the operating height meet the safety aspects; have and are willing to bear guarantees for third party losses caused by the operation of unmanned aircraft.

Regular drones have various types of sizes, shapes and functions. Some drones are equipped with cameras, infrared, GPS, sensors, and weapons and other supporting tools. Drones are made of lightweight materials, so they can fly quickly and can also fly at low or certain altitudes to avoid unwanted things.

Types of Drones Based on Their Use

At this time, the development of drones is quite rapid in Indonesia, even now many of various groups use drones, either for personal needs or for use in important needs, such as Military Drones, Civil Drones, including industrial drones; consumer drones, Agricultural drones; Professional drones; toy drone.

The use of drones according to the nature of their use is Military and Civil. For military purposes, drones can be used for many things such as reconnaissance into dangerous areas, gathering information, following targets or attacking enemies quickly. The military also equips

drones with missiles to immobilize targets or provide assistance to troops on the ground for their next assignment. Whereas the use of civilian drones, namely the use of drones in civilian circles has many uses such as search and rescue, monitoring traffic and weather, delivering goods, extinguishing fires, and also looking for good photo ways in the field of photography. (Hartmann & Giles, 2016). Some of the benefits of drones in agricultural technology include: as a plant growth monitoring system, assessment of soil conditions, irrigation and drainage systems, monitoring of livestock, optimization of plant populations on land, and so on. Using images from cameras mounted on drones, the Farmers can more easily monitor the growth of their plants, in which areas the plants have normal growth and which areas have abnormal growth, so that the treatment process for abnormal plants can be carried out as soon as possible. Plant growth monitoring can be used using the Normalized Difference Vegetation Index (NDVI) method where the data image is taken using a Near-Infrared (NIR) or RGB camera.

Living green plants absorb solar radiation in the process of photosynthesis. Chlorophyll in plants will emit more solar radiation to the near-infrared camera, so plants that have normal growth will appear greener when compared to plants that have abnormal growth. This process has been carried out in South Africa since 2014. In addition, by using a Near-Infrared (NIR) or RGB camera, farmers can determine the nutritional value of the land to be planted.

If we pay attention to the Indonesian Government, Drones have an important role for technological advancement in Indonesia. There are various functions and Drone Guarding, even though drones were initially only used by those in the military and government. But now, drones can be used by anyone for various other purposes, including supporting work. A drone is basically a mini airplane-shaped device that can fly like a helicopter. It's just how to fly this drone using a remote control. Similar to a child's toy, but of course cooler and more sophisticated, and there is no need for passengers in it. Thus, drones bring a lot of luck to mankind, besides being a hobby, it is also for recreation.

It is undeniable that the presence of technology is like a coin that has two sides. No matter how sophisticated the technology, it must have good sides and bad sides. This also applies to *drones*. The ease of getting and using a *drone* is very helpful for humans. Its relatively small and slender shape allows the *drone* to fit into narrow gaps. Dangerous activities such as monitoring the structure of the chemical industry can also be replaced by *drones*. In fact, with *drones* we can take landscape photos or videos. Many photographers have captured the moment with *drones*. For the most part, the results were stunning.

Several law enforcement agencies in the United States also use drones to search for missing people by detecting their body temperature (Heatherly, 2014). This technology is even more sophisticated thanks to the night vision and X-ray sensors embedded in the drone. There are several advantages to operating drones, namely: (Hassanalian, Rice & Abdelkefi, 2018). The use of drones, such as in the field of traffic: drones can overcome congestion on the road traffic, thereby reducing the activity of the Police.

- 1) Likewise, in the Covid 19 pandemic, spraying can be done with drones from above so that it can avoid the spread of Covid 19.
- 2) Spraying pests and/or sowing seeds in agricultural areas with drones makes it easier for Indonesian farmers
- 3) The Indonesian state-owned electricity company, the installation of high voltage electrical cables, can be made easier by using drones
- 4) Land mapping to obtain land certificates can be done from above with drones, making it easy for land mapping implementers.

The use of sophisticated technology such as drones can greatly benefit the people of Indonesia and the world. However, no matter how sophisticated a technological object is and can provide benefits, it still has weaknesses or bads if it is misused by humans.

Drones are often misused for bad purposes. For example, in the US, drones are used to send drugs or sharp weapons to prison. In addition, several regions in the Middle East use

drones as weapons as explosives (Mentzakis, Stefanowska & Hurley, 2011). Or as happened in Medan City, Drugs are dropped from above with drones, so it isn't known who owns the drugs.

The use or operation of drones in society, in addition to the many advantages that can occur, drones can also provide harm or weakness if misused. Like in cities there are many terraced houses, in the house there are mothers who are breastfeeding their children, as well as bathing in the river or on the beach while from above there are drones that record and then sent to YouTube so that it becomes viral in the community. In addition, as in Sumatra, drones are used by Pertamina to determine places with a lot of oil, so that Pertamina does not bother to mobilize its employees to work, it is enough to use these drones to identify places that have a lot of oil. Drones with cameras can also be used as spying or espionage by a country.

After we know the operation of drones, especially in Indonesia, there are advantages and disadvantages if the operation of drones is misused by someone. Thus, there needs to be supervision over the use or operation of drones in Indonesia. Taking into account the Attachment to the Regulations for the operation of unmanned aircraft or drones in Indonesia, it appears that the supervision of the operation of unmanned aircraft is carried out by the Directorate General and carried out in collaboration with related agencies in accordance with their duties and authorities. The implementation of supervision over the operation of unmanned aircraft is carried out by the Flight Inspector in accordance with their duties and authorities (unmanned aircraft operation supervision team) and based on information on complaints from the public.

In the implementation of drone operation supervision, the Directorate General can take preventive measures by providing socialization to the public at least regarding the operation procedures, areas/locations that are allowed and prohibited in operating drones and other related information.

The badness that can be caused by *drone* misuse can be overcome by attacking the electronic system in the *drone*. Because drones use GPS, we can trick the system with electro magnetic waves; this wave can confuse the drone user, even destroy the electronic system.

In Indonesia, the government already has a regulation regarding the use of drones which is stated in the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 47 of 2016. This regulation is a revision of the Minister of Transportation Regulation Number PM 180 of 2015 concerning Control of Operation of Unmanned Aircraft Systems in Served Airspace Indonesia. However based on Article 8, Regulation of the Minister of Transportation of the Republic of Indonesia Number PM. 37 of 2020 concerning the Operation of Unmanned Aircraft in the Air Space Served by Indonesia has revoked and declared that this regulation no longer applies. What is currently in effect is the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 37/2020 concerning the Operation of Unmanned Aircraft in the Air Space Served by Indonesia.

The scope of the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM. 37 of 2020, namely the operation of unmanned aircraft registered in Indonesia; operation of unmanned aircraft in the air space served by Indonesia; operation of unmanned aircraft by individuals and/or legal entities from abroad; supervising the operation of unmanned aircraft in the air space served by Indonesia; and imposition of sanctions. Furthermore, sanctions are given based on the results of surveillance in accordance with the conditions of violating air sovereignty and security areas; threatens aviation safety and security; has a threat impact on the central government, economic center, national vital objects and national safety; has no consent; and operate not in accordance with the approval given.

Imposition of sanctions, may include imposition of criminal sanctions in accordance with statutory provisions; imposition of administrative sanctions in the form of revocation of approval and being put on the black list; imposition of actions in the form of frequency jamming; coercion to leave the area or air space; cessation of operation in the form of dropping into a safe area and other necessary measures. Furthermore, the imposition of sanctions on drone operations must pay attention to the interests of defense and security of airspace; the safety

interests of the area/air space user; protection for buildings, property, and people under where the unmanned aircraft operates.

CONCLUSION

Paying attention to the regulations regarding the operation of unmanned aircraft in airspace served by Indonesia, which is still in the form of a Ministerial Regulation, it seems that it is still weak and less firm in sanctions against drone abuse, and also if we see from the legal binding capacity the Ministerial Regulation is still weak compared to the form of the Law Law as a provision of Positive Law in Indonesia under the 1945 Constitution of the Republic of Indonesia and Pancasila. In order to create clear and definite legal protection and be able to provide flight security and safety against possible dangers posed by the operation of unmanned aircraft and to accommodate the development of unmanned aircraft technology, it is necessary to make arrangements in the form of a Law regarding aircraft unmanned or drones in Indonesia. So that the State of Indonesia, can have a Law regulating the Operation of Unmanned Aircraft or Drones separately which is able to provide protection and legal certainty for Indonesian citizens and foreign countries who operate drones in Indonesia's sovereign Airspace. Arrangements for drone operation in Indonesian airspace are also aligned with the provisions in international law regarding drone operation.

REFERENCES

- Ruwantissa, A. (2014). *Law and Regulation of Aerodromes*.
- Cavoukian, A. (2012). "Privacy and drones : unmanned aerial vehicles." *Privacy by Design, Canada*.
- Xiang, F.S., O'young, S., & Rolland, L. (2018). "Development of Small UAS beyond-visual-line-of-sight (bvlos) flight operations: System requirements and procedures." *Drones*.
- Kim, H., & Giles, K. (2016). "UAV exploitation: A new domain for cyber power." *In International Conference on Cyber Conflict, CYCON*.
- Hassanalian, M., & Abdelkefi, A. (2017). "Classifications, applications, and design challenges of drones: A Review." *Progress in Aerospace Sciences*.
- Hassanalian, M., Rice, D., & Abdelkefi, A. (2018). "Evolution of Space drones for planetary exploration: A Review." *Progress in Aerospace Sciences*.
- Michael, H.C. (2014). "Drones: The american controversy." *Journal of Strategic Security*.
- Mark, V.H. (2016). "Methodology of comparative legal research." *Law and Method*.
- Emmanouil, M., Stefanowska, P., & Hurley, J. (2011). "A discrete choice experiment investigating preferences for funding drugs used to treat orphan diseases: An exploratory study." *Health Economics, Policy and Law*.
- Chase, M.C., & Amanda, C.G. (2015). "The flying sidekick traveling salesman problem: optimization of drone-assisted parcel delivery." *Transportation Research Part C: Emerging Technologies*.
- Nengah, P.I., & Hakim, A. (2016). "Analysis of Indonesian maritime security opportunities and threats as impact of the development of the strategic environment." *Asro Jurnal-STTAL*.
- Sanne, T. (2018). "Theoretical and normative frameworks for legal research: Putting theory into practice." *Law and Method*.