INSLA E-PROCEEDINGS
مقالات المؤتمر العالمي في الشريعة والقانون

Vol. 3 No.1, pp. 50 - 60 | OCTOBER 2020
E-ISSN: 2735-1742
www.insla.usim.edu.my

AN EARLY ANALYSIS OF MALAYSIAN LAW ON DRONE OPERATIONS FOR COVID-19 PANDEMIC

Che Zuhaida Saari

Faculty of Syariah and Law, Universiti Sains Islam Malaysia, Nilai

Email: chezuhaida@usim.edu.my

ABSTRACT

COVID-19 or Coronavirus 2019 is a contagious disease that is distressing the world today. It was first detected in mid-December 2019 in Wuhan, Hubei, China. On March 11, 2020, the World Health Organization (WHO) declared it as a world pandemic. A total of 36 237 403 cases have been reported to the WHO (as of October 9, 2020) involving 1 054 868 deaths from various countries. While the number of cases in Malaysia is 14 722, with 152 deaths. Various initiatives have been and are being made by the Malaysian government in addressing the crisis including the Movement Control Order (MCO) and Recovery Movement Control Order (RMCO). This paper discusses how drone technology has been used in assisting the Malaysian government to ease the burden of COVID-19 transmission. A special analysis is made to relevant Malaysian laws. The discussion begins with an explanation of the status of COVID-19 in Malaysia and some prevention methods that have been taken by the government. It then focuses on the role of drones in controlling the disease transmission. It provides some legal analysis regarding the use of drones in the context of restraining the spread of COVID-19 in the country. Lastly, it ends with some legal implications, recommendations and improvements. The methodology used is by analysing the Malaysian Civil Aviation Regulations 2016 and references are made to relevant news. This paper accomplishes that the use of drones in dealing with the COVID-19 pandemic is a wise and judicious endeavour which can be further enhanced in Malaysia.

Keywords: *COVID-19 outbreak, pandemic, drone operation, Malaysian Civil Aviation Regulations 2016, Movement Control Order (MCO)*

Introduction

In the beginning of March 2020, the issue of COVID-19 has become a global issue. This is the effect of its fast transmission pattern on the population across the world. Starting from the time it was first detected in China, it only took about 3 months for the pandemic to spread to many countries around the world.

COVID-19 or Coronavirus 2019 is a contagious disease that is plaguing the world today. It was first detected in mid-December 2019 in Wuhan, Hubei, China. Since its contagious pattern has been spreading across many countries, on 11 March 2020, the World Health Organization (WHO) had declared the epidemic as a pandemic (Ducharme, 2020). As of 9 October 2020, a total of 36 237 403 confirmed cases have been reported to the WHO. Of these, 1 054 868 deaths were recorded from various countries (Official Portal of World Health Organization (WHO), 2020).

From the above scenario, Malaysia is not spared from this COVID-19 pandemic crisis. It was reported[1] that on 14 April 2020 Malaysia was ranked 37th in the list that turned it to be the highest ASEAN country in terms of number of confirmed cases during that time (Official Portal of Ministry of Health Malaysia, 2020), (ASEAN Briefing, 2020). Since that day, the Malaysian government has been and is implementing a number of initiatives to tackle this crisis effectively. Among them is by executing the 'Movement Control Order' (MCO). For the purpose of ensuring the success of MCO, the government has implemented various measures accordingly. Among them is the use of drone technology.

This paper aims at discussing how drone technology is applied in contributing to the success of the MCO in an effort to alleviate the burden of the pandemic spreading. An analysis of relevant Malaysian laws and regulations will be presented. The first discussion is centred on the current status of COVID-19 in Malaysia, as well as the implementation of the MCO in the country. Next, the paper explains how drone technology is being utilized by the government in this critical situation, as well as its role in helping the government in implementing the MCO. Afterward, an analysis of laws and regulations in Malaysia associated to the use of drones is made. Apart of that, the discussions are also geared towards the effects of legislation on enforcement, technology consumer, and also the public. The article ended with some recommendations and outlook for improvement in the use of drone technology in addressing the COVID-19 in Malaysia.

COVID-19 and Movement Control Order (MCO) In Malaysia

The first case of COVID-19 in Malaysia involved Chinese tourists. On 5 January 2020, Malaysian local press reported that the Malaysian Ministry of Health (MOH) had confirmed that there were three Chinese nationals entering Malaysia from Singapore via Johor who tested positive COVID-19 (Harits Asyraf, 2020). They are an elderly woman aged 66, and two grandchildren, ages 11 and 2 years old. The case was classified as a first case of COVID-19 in Malaysia.

As of 9 October 2020, the total number of confirmed COVID-19 cases in Malaysia is 14 722 cases with 152 death (Official Portal of Ministry of Health Malaysia, 2020). In an effort to curb the spread of COVID-19 in Malaysia, the government has and is undertaking various initiatives to ensure this pandemic can be prevented from getting worse in the country. Among the important initiatives introduced is the implementation of the 'Movement Control Order' or also known as MCO. MCO was enforced with the aim to control the movement of all residents of Malaysia and it applies throughout Malaysia. It is very important in order to prevent the spread of the pandemic. As of 29 September 2020, there are already seven phases for MCO. It is carried out in stages according to the progress of this pandemic situation in the country.

The first phase of MCO was implemented on 18 - 31 March 2020. While the second was on 1 - 14 April 2020. The third phase was on 15 - 28 April 2020, and the fourth was on 29 April – 12 May 2020. The fifth phase was on 13 May – 9 June 2020 which was then known as Conditional Movement Control Order (CMCO)[2] (Bernama, 1 May 2020). The sixth phase was on 10 June - 31 August 2020 and it was

known as Recovery Movement Control Order (RMCO)[3] (Loo, 2020). The current phase is the seventh phase which starts on 1 September – 31 December 2020 and remains under RMCO.

Law enforcement under MCO is made in accordance with the Prevention and Control of Infectious Diseases Act 1988 and also the Police Act 1967. There are six main orders or directives contained in this MCO namely: (1) A comprehensive ban on the movement and assembly including religious, sports, social and cultural activities; (2) Comprehensive restrictions on all Malaysian from travelling abroad; (3) Restrictions on the entry of all foreign tourists and visitors into the country; (4) Closing of all nurseries, government and private schools and other primary, secondary and pre-university educational institutions; (5) Closure of all Public and Private Institutions of Higher Learning (IPT) as well as Skills Training Institutes throughout the country; and (6) Closure of all government and private premises except those involved with essential national services (essential services)[4] (Official Website of the Office of the Prime Minister of Malaysia, 2020).

Drone Operation and Its Roles

Drones or unmanned aerial vehicles, are also referred to as Unmanned Aerial Vehicle (UAV). They are as well referred to as Unmanned Aircraft System (UAS) by the 'Civil Aviation Authority of Malaysia (CAAM)' or the Malaysian Civil Aviation Authority. A drone is a type of aircraft that does not require a pilot to operate it in the air. Controlling the drone flights are usually made in two ways, either manned by remote control, or flown in accordance with what has been programmed in the computer system of the aircraft (Unmanned Aircraft Systems (UAS) ICAO Document, 2011).

The use of drones is actually originated from military operations. However, as this technology grows rapidly, its use has then expanded to commercial applications such as scientific, recreational, tourism, agriculture and many more. These include surveillance, product delivery, aerial photography, infrastructure inspection, and so forth. In the present era of the COVID-19 pandemic, it is wise to apply this technology to assist the country in dealing with the pandemic. It appears that such technology has been adopted by several countries, including China, the USA, Spain, and Australia. Indeed, the similar efforts have also been made in Malaysia.

In addition to the government's persistent efforts to mobilize medical experts, as well as those at the forefront in treating patients of COVID-19, other authorities such as polices and soldiers have been deployed to ensure that the public comply with the government directives and strategies. This is fatal in order to ensure the effectiveness of prevention of the pandemic transmission in the country.

At this juncture, the use of drone technology is seen as capable of helping and lightening the burden of the authorities in achieving this objective. This is significant especially during the implementation of MCO throughout the country which has limited the movement of the public (Sabapatty, 2020). On 24 March 2020 which is first phase of the MCO, the Royal Malaysia Police held a brief launch of the use of drones, in which it was informed that two units of drones will be used at the start of the operations. The ceremony was officiated by the Inspector-General of Police, Tan Sri Dato Seri Abdul Hamid Bador, and the Commander-in-Chief of the Armed Forces, General Tan Sri Dato Sri Haji Affendi Buang at the Brickfield District Police Headquarters (Official Portal of Royal Malaysia Police, 24 March 2020).

In the second phase of the MCO, the Malaysian Civil Aviation Authority has increased the use of drones by giving permission to the authorities to use 92 drones as an effort to carry out the enforcement and supervision of MCO throughout the country (Abas, 2020). This permission is given to the police in which the drone operation is led by the police under the Air Force Drone Unit (PGU), in collaboration with the Malaysian Armed Forces (ATM) and three private companies namely, Deftech Unmanned Systems, System Consultancy Services and Aerodyne Group. A 'Notice to Airmen' (NOTAM) has been issued to inform other airspace users in Malaysia regarding the operation of drone, by which it is allowed to fly as high as 500 feet (from ground level) at the maximum height. This NOTAM is applicable to all until 14 April 2020 (subject to the extension of MCO) and it involves 90 members from various agencies (Abas, 2020), (Bernama, 7 April 2020).

The public is well conscious of the contagious nature of the COVID-19 pandemic. It is very easy to infect others if no effort is made in preventing its transmission effectively and efficiently. The use of

drones is seen as one of the ‘effective measures’ as it is able to monitor and provide information to the relevant authorities in a short time. This is especially about the movement of Malaysians who do not comply with the MCO directives and instructions. In the event of a violation of the order occurs, with the presence of this drone, the monitoring task is viewed easier to be executed by the authorities. The Commander of the Malaysian Army, General Tan Sri Ahmad Hasbullah Mohd Nawawi described the use of drones as 'eyes' to the authorities throughout the MCO implementation (Malik, 2020). This is because of its nature that can monitor, observe, detect, and provide information about the movement of society who breaks the rules and it can be done through a camera system attached to the drone. Furthermore, the use of drone surveillance has been further expanded at night, apart from being used during the day only, especially those involving areas that gazetted as COVID-19 red zone (Bernama, 29 March 2020), (Mohd Nor, 2020), (Astro Awani. 2020).

In addition to the drone’s role of monitoring and observation, it also serves to warn and alert the community about the dangers of COVID-19 as well the importance of being in their respective homes, and to comply with MCO instructions. It is easier to carry out the task because the drone is equipped with loudspeakers that can warn the public loudly and clearly. In carrying out such duty, it has been given the permission to fly and hover at about 500 feet above the ground. This is seen to give a psychological effect on people living in high flats or residential buildings, especially in densely populated areas.

Such drone operations are in particular operated in large cities that people generally stay in high-rise homes or buildings. In fact, the drone is also equipped with warning sirens to give advice and announcement (Harian Metro, 24 March 2020). Interestingly, this warning was made in three languages, namely Bahasa Malaysia, Chinese and Tamil as the population is made up of three main races, namely Malay, Chinese and Indian (Bernama, 29 March 2020). In addition to its use for settlement areas, drones have also been used to monitor open market areas (Bernama, 23 March 2020). Among the models used in this operation include Mavic 2 Enterprise and DJI Matrice 210 (Official Portal Royal Malaysia Police, 24 March 2020).

Among other indisputable advantages of the use of drones is that it saves time and manpower. This is based on its characteristic that can move from one place to another rapidly. This indeed can clearly save costs and manpower in regards of its monitoring task and function. And most importantly, the probability of transmission of the COVID-19 pandemic can be reduced, as this operation does not require as much manpower as usual. Therefore, the probability of pandemic transmission can also be reduced. On top of that, it helps the authorities in conducting the operations to ensure public compliance with MCO instructions. Most importantly, it can conveniently prevent the possibility of this pandemic being spread while the operation is carried out by the authorities.

Drone and Laws in Malaysia

It is undeniable that drone operations have been rapidly operated in most large countries. This situation includes operations for military, commercialization, agriculture, tourism and so forth. The latest progress of drone operation is intended to control COVID-19 outbreaks. However, since the drone is a machine, it can bring harm to the society and the country if it is misused and therefore, most of the countries have set specific rules and laws for its operation.

Among the countries that take this issue seriously and have developed regulatory and issued legal notices on drone flights are the United Kingdom, the United States of America, Japan, the United Arab Emirates, Brazil, Canada, South Africa, Ireland and many others including Malaysia. In these circumstances, the Malaysian authorities have also developed specific legal rules for the operation of drones in the country.

(a) Relevant Legal Rules

It is irrefutable that drone operations have gained a foothold in the Malaysian society and are increasingly popular in use today. In the past, drone operations were widely used for agricultural technology such as pesticide spraying, crop fertilization, as well as for tourism, filming and other purposes. At present, drone operators have taken a step forward as it is used in pandemic control operations in the country. However, it should be noted that the operation of these drones must comply with the standards and regulations set by the Malaysian authorities as it involves public and national safety.

In this regard, the Malaysian Civil Aviation Authority has established a law on drones which is primarily enshrined (among others) in Regulations 140-144, Malaysian Civil Aviation Regulations 2016. It is to be noted that these legal rules apply to all drone operators in Malaysia whether for the purposes of surveillance, broadcasting, commercial, recreational and other activities including controlling and monitoring the COVID-19 pandemic. The rules are provided under Regulations 140 until 144 of Part XVI (Malaysian Civil Aviation Regulations 2016) under a title of 'unmanned aircraft system'.

From a legal point of view, Malaysian Civil Aviation Regulations 2016 uses the term 'unmanned aircraft'[5] compared to the term 'drone'. This is evident when Part XVI employs such word. Yet these two terms refer to the same object. The Malaysian Civil Aviation Regulations 2016 Interpretation Part has interpreted 'aircraft' to a meaning of 'a machine that can derive support in the atmosphere from reactions of the air, other than reactions of the air against the surface of the earth' (Interpretation Part, Malaysian Civil Aviation Regulations 2016).

Part XVI (Malaysian Civil Aviation Regulations 2016) begins with Rule 140, which provides for the law on unmanned aircraft systems. The term 'unmanned aircraft system' means an aircraft and its associated elements which are operated with no pilot on board (Interpretation Part, Malaysian Civil Aviation Regulations 2016). In general, Rule 140 stipulates that the unmanned aircraft system cannot be flown by anyone either in Class A, B, C or G airspace[6] (Rule 140(4), Malaysian Civil Aviation Regulations 2016), or within the aerodrome traffic zone, and at an altitude of more than 400 feet above the surface of the earth. However, it is allowed if authorised by the Director General and subject to the requirements determined by the Director General (Rule 140(1), Malaysian Civil Aviation Regulations 2016).[7] Any application for this permission must be made to the Director General, that is in accordance with Rule 189 (Application for License, Certificate, Permit *etc*.), Malaysian Civil Aviation Regulations 2016.

In other words, it can be construed that the Malaysian law generally does not allow all drone systems to be flown by anyone in any of three conditions or places. They are namely: (1) airspace class A, B, C and G; (2) within the aerodrome traffic zone; and (3) at the altitudes exceeding 400 feet above the ground level. It is understood that the operation is prohibited even though in the situation of assisting the authorities to restrict the COVID-19 transmission. Nonetheless, these limitations can be lifted with the permission of the Director General of the Civil Aviation Authority of Malaysia.

Rule 140 also stipulates that anyone, who is responsible for the operation or is in charge of this aircraft system, is not allowed or shall not cause any article or animal, whether it is attached to a parachute or not, to be dropped from the aircraft system (Rule 140(3), Malaysian Civil Aviation Regulations 2016).[8] Hence, the law also does not permit any articles, materials, goods or animals to be dropped from drones either with or without parachute assistance. As a matter of fact, this also applies to COVID-19 operations.

The legal authorisation of aerial work involving this unmanned aircraft system is explained in Rule 141, Malaysian Civil Aviation Regulations 2016. Rule 141 stipulates that no one can fly this aircraft for the purpose of aerial work without the permission of the Director General (Rule 141(1), Malaysian Civil Aviation Regulations 2016).[9] At this juncture, 'Aerial work' means 'an aircraft operation in which an aircraft is used to provide specialized services in agriculture, construction, photography, surveying, observation, and patrol, search and rescue, aerial advertisement and other similar activities'

(Interpretation Part, Malaysian Civil Aviation Regulations 2016). For this purpose, the application for permission of operation for aerial works must be made in accordance with Rule 189 (Application for Licence, Certificate, Permit etc.) (Rule 141(2), Malaysian Civil Aviation Regulations 2016).[10]

Thus, Rule 141 provides legal authorisation in respect of any drone operation for the purpose of aerial work that is used to provide specialized services for instances in agriculture, construction, photography, measurement, observation, patrol, search and rescue, air advertising and other similar activities. Such authorisations are obtained via the permission of the Director General in advance. Therefore, with regard to COVID-19 pandemic, all drone operations for the purpose of patrolling, monitoring, and observing public who violates the MCO directive, and the like, must firstly obtain the Director General approval as well.

There are three categories of drones mentioned in Malaysian Civil Aviation Regulations 2016. The first is a 'small unmanned aircraft system'. Under the Interpretation Part of Malaysian Civil Aviation Regulations 2016, a 'small unmanned aircraft' is defined as an unmanned aircraft system, other than a balloon or a kite, having a mass of not more than 20 kilogrammes without its fuel but including any articles or equipment installed in or attached to the aircraft at the commencement of its flight (Interpretation Part 'small unmanned aircraft', Malaysian Civil Aviation Regulations 2016). The relevant laws are explained under Rule 142, Malaysian Civil Aviation Regulations 2016.

Rule 142 stipulates that the person in charge of this small unmanned aircraft can fly it only if he is satisfied that the flight is safe. He shall also be responsible for maintaining a direct visual contact with the aircraft (Rule 142(1), Malaysian Civil Aviation Regulations 2016).[11] This means that the operator can fly such type of aircraft with the condition that he can monitor and control his flight routes, for instance the operator must maintain his direct visual contact, in order to avoid any possible collisions with other aircraft, persons, vehicles, vessels, and any structure such as building, monument, and etc. (Rule 142(2), Malaysian Civil Aviation Regulations 2016).[12]

Therefore, the Malaysian law legally allows for the drone under the category of 'unmanned small aircraft system' (under 20 kg) to be flown by the operator with no need for a permit. However, the rules stipulate that such drone operator must have a capacity to ensure that it is a safe flight and always maintain a direct visual contact with the aircraft. This condition is a legal requirement under the Malaysian law.

The second category of drones mentioned in Malaysian Civil Aviation Regulations 2016 is 'small unmanned surveillance aircraft'. This type of aircraft refers to a small unmanned aircraft which is prepared to carry out any form of surveillance or data collection (Interpretation Part, Malaysian Civil Aviation Regulations 2016.[13] For this type of category, its laws are enshrined under Rule 143, Malaysian Civil Aviation Regulations 2016.

Regulation 143 (1) states that no person shall be allowed to fly a small unmanned surveillance type drone in any of the circumstances as stipulated by the law without the permission of the Director General. Such prescribed circumstances are (Rule 143(1), Malaysian Civil Aviation Regulations 2016):[14] (1) over 'any designated area' (Rule 143(3), Malaysian Civil Aviation Regulations 2016);[15] (2) within 150 meters of any designated area; (3) over any gathering in the open air attended by more than 1000 people; (4) within 150 meters of any gathering in the open area attended by more than 1000 people; (5) within 50 meters of any ship, vehicle or structure that is not under the control of the person in charge of the aircraft; (7) within 50 meters of any person; and (8) within 30 meters of any person on departure and landing. For this purpose, an application for a permit of operation must be made in accordance with Regulation 189 (Application for License, Certificate, Permission etc.) (Rule 143(2), Malaysian Civil Aviation Regulations 2016).[16]

Hence, for the category of 'small unmanned surveillance aircraft' or surveillance drones, the Malaysian law provides that the permission of the Director General is required if this type of drone is to be flown in the specified area or place as mentioned earlier.

The third category of drones mentioned in Malaysian Civil Aviation Regulations 2016 is 'unmanned aircraft system of more than 20 kilogrammes'. Its laws are enshrined under Regulation 144, Malaysian Civil Aviation Regulations 2016. Rule 144 stipulates that no person shall fly this type of aircraft which has a mass exceeding 20 kilogrammes that is with no fuel without permission from the Director General (Rule 144(1), Malaysian Civil Aviation Regulations 2016).[17] Thus, based on the Malaysian legal requirement, if the aircraft falls under the category of more than 20 kilogrammes, an application for permission of operation must be made to the Director General in accordance with Regulation 189.

Relying on the above, when the drone system that is operated for monitoring COVID-19 pandemic is categorised under the 'unmanned aircraft systems over 20 kilogrammes', it then requires legal permission from the Director General before any flight operation is made.

Therefore, it is concluded that drone operators who meet the criteria of the first category of drone that is 'small unmanned aircraft which is not exceeding 20 kilogrammes', do not need to apply for permission to fly under the Malaysian legal requirement. This condition is applied only if the operator meets the previous mentioned requirements, especially in ensuring the level of safety in its operation.

On the other hand, for the operator of the second category of drones that is 'small unmanned surveillance aircraft' who wish to fly them on the areas stipulated above, the application of permission to legalise the operation must be made by the operator and submitted to the Malaysian Civil Aviation Authority before operating such drone. The same legal requirement also applies to the third category of drone that is 'unmanned aircraft systems over 20 kilogrammes.

From the above categories, it is construed that the operation of drones in dealing with the COVID-19 pandemic must be guided by the above-mentioned legal rules. At these circumstances, it is observed that the use of drones during the MCO period is indeed more on to the second category of aircraft, that is small unmanned surveillance aircraft. This is based on the purpose and aim of the MCO operation that is monitoring, observation and prevention of the pandemic. Therefore, the legal rules governing the unmanned surveillance aircraft must be observed by the drone operators of the pandemic.

Under the Malaysian law, application for permission of flight operation for the small unmanned surveillance aircraft or drone must be made to the Director General, Malaysian Civil Aviation Authority. This is by making a payment of RM250. While for the third category of drone that is the unmanned aircraft systems that exceeds 20 kilogrammes, the payment is RM1000. On top of that, a separate charge is applicable for an application of the drone operation for the purpose of areal work which is RM800 for a new application, and RM500 for the purpose of licence renewal for every year (Official portal of Civil Aviation Authority of Malaysia, 2020).

Any illegal drone operation conducted without the permission of the Malaysian Civil Aviation Authority will be subject to penalties and conviction. For individuals, a fine will be imposed that does not exceed RM50 000 or imprisonment for 3 years or both. While for a corporate body or organization, a fine not exceeding RM100 000 will be imposed if found guilty (Official portal of Civil Aviation Authority of Malaysia, 2020).

(b) Legal Implications

With the establishment of laws and regulations governing the operation of drones in Malaysia, it is observed that it has a lot of impact on the authorities and the general public. From the point of view of the Malaysian authorities, with these laws and regulations, the authorities, especially the Malaysian Civil Aviation Authority, can monitor and observe all drone operations, so that it complies with all specifications and conditions prescribed. This is important because drone operations can involve

different types of drones and some of with multiple functions. For instance, if the drone is used for aerial work, then it needs to be registered and monitored. Therefore, its operation must be authorized by the Malaysian authorities under the Malaysian law.

In general, drones can be flown anywhere in the air. However, when its operation is bound by the law, therefore, there are certain limitations that need to be followed and complied with. For example, a drone flight is prohibited at certain areas that have been determined by the law, unless it is authorized by the authorities. The rules are prescribed by the authority as the flight can be dangerous to other flights or other operations that are carried out in that area.

Hence. when there is a law, all operators must, with no fail, comply with it unconditionally. Thus, it becomes easier for the Malaysian authorities to monitor whether the drone operations comply with all prescribed conditions or not. In the event whereby the operator is found violating the terms and conditions, the operator or offender will be fined according to what is stated in the drone rules. This gives an implied impression that the operation of drones in Malaysia is regarded as something serious and significant matter.

As drone operations have been applied in dealing with the spread of the COVID-19 pandemic in Malaysia, its operations need to be done carefully and cautiously so as to not cause harm and danger to the people, especially the public. This is especially important when its operation involves the settlement areas in particular the densely populated areas. With regard to the transmission of the COVID-19 pandemic, it is observed that the transmission of the disease is found to occur widely in densely populated areas. Therefore, this area will be classified as a 'red zone' area by the authorities. As a result, the probability of using drone applications in these areas are very high in order to deal with such situation.

At this point, when there are laws and regulations with respect to drone operations, all parties concerned will act carefully, as to comply with the standards and laws that have been set by the authority. For example, making an application for permission of operation of drones in advance from the Director General before flying drones in the settlement areas or other unauthorized areas. Another example is in the case of operating drones that is exceeding a height of 400 feet above the ground level as occurred during the MCO periods.

With the establishment of laws regulating the operation of drones, the public will feel safer and more comfortable, especially if the drones used are drones that weigh more than 20 kilogrammes and with various functions. This is because such type of drone can easily cause damage to property and even death to others in the event of collision happens in its operation if it is not properly controlled and managed by the operator.

From the viewpoint of the drones use for the purpose of spraying of disinfectants from the air, as they were conducted in the COVID-19 pandemic operation, this indeed requires close monitoring from the authorities and the operator must comply with the law. This situation is crucial because the drone is used to carry liquid materials that may interfere with public health. Furthermore, the work of spraying is most likely carried out in densely populated areas. Therefore, according to the law, the operator must obtain permission from the authorities in advance to transport such materials. Transportation of hazardous materials by air is subject to Rules 132 and 133 of Malaysian Civil Aviation Regulations 2016.

Some Remarks

The operation of drones in Malaysia during the MCO period is a commendable effort. The use of drone technology during the MCO has indirectly assisted the authorities in Malaysia in further monitoring the movement of the public in certain areas. It is important to note that some of these drone systems are

equipped with cameras that can take pictures and provide information to their operators. They will then provide the information to the police or army in the event of non-compliance of the public with the MCO directives and regulations.

It is undeniable that drones were also seen to have assisted the authorities in their efforts to warn and remind the public about their presence at home, as well as the dangers of the ongoing COVID-19 pandemic in Malaysia. This is easily applied as the drone system is equipped with speakers and its ability to fly and warns occupants who stay at high houses such as flats, apartments and condominiums. This application is indeed very helpful to the Malaysian authorities since warnings and reminders can be informed easily and effectively to the community.

It is also concluded that the application of drones in Malaysia cannot simply be carried out easily because it is related to certain rules and laws. Drones that fall into certain categories are indeed bound by the Malaysian law. Similarly, drones that are used for certain purposes are also subject to law. When they are being categorised under certain category, the operator of the drone must follow the rules set by the Malaysian authorities.

Relying on the various uses and benefits of drones that can be taken from its operation, it is recommended that such technology should be further expanded in Malaysia. It is not only used in big cities, but it can also be extended to all states in Malaysia. However, it should be noted that it must be done carefully and prudently as the implications of its operation to the public are significant. In this case, the issuance of permits and operating licenses to operators can be an example. Such permission must be strictly controlled and screened by the relevant authorities. Any licenses and permits that will be issued will only be given to those or operators who are truly qualified and meet the set criteria.

In addition to the government's policy of encouraging the drone sector to expand widely in the country, it is also important to improve the rules and regulations involving the operation of these drones from time to time according to the latest drone technological developments. Perhaps one day, there will be a system of purchasing goods or foods that can be delivered via drone technology in the country. This is possibly suitable to be operated especially during the MCO or emergency period. However, such circumstances are in need of the formation of more precise and clear rules and laws.

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[1]As of 7 April 2020.

[2] CMCO was announced by the Prime Minister of Malaysia, Tan Sri Muhyiddin Yassin in his Labour Day speech on 1st May 2020. It is a MCO lessening regulation with its aim to reopen the Malaysian national economic in a controlled means and strategized.

[3] In RMCO phase, the Prime Minister of Malaysia announced that the interstate travel was allowed except in certain areas that were still under Enhanced Movement Control Order (EMCO). The areas were classified as EMCO and subjected to stricter order if a large cluster were detected. The areas that previously declared under EMCO included Simpang Renggam in Johor and Sungai Lui, Hulu Langat Selangor.

[4] Essential services' is also known as 'fundamental services' to the people and the country. It is not subject to closure under MCO. Some important examples are as under the category: (1) 'Retail' i.e. such as grocery stores, convenience stores, supermarkets, public markets, wholesale markets; (2) 'Security and Defence' such as the Royal Malaysian Police (PDRM) and the Malaysian Armed Forces (ATM); (3) 'Statutory Body Government Services' such as civil aviation, customs, maritime, meteorology, printing, registration, Road Transport Department (JPJ); (4) 'Food Supplies and Services' such as restaurants, stalls, small hawkers, food trucks, food

courts, on-site restaurants; (5) Health Services; (6) Ports and Airports; (7) Broadcasting and Information; (8) Telecommunications; (9) Fuel and Lubricants; (10) Fire Engines; (11) Prison, Temporary Detention Centre, Immigration Depot, Rehabilitation Centre, Lockup; (12) Land, Sea, Air Transport (Including E-Hailing); (13) Banking, Finance and Exchange; (14) Solid Waste Management and Sewerage; (15) Electricity and Energy; (16) Water Services; (17) Post and Courier.

[5] For instance, see, Rules 140 – 144, Malaysian Civil Aviation Regulations 2016.

[6] Rule 140(4), 'Unmanned Aircraft System', Malaysian Civil Aviation Regulations 2016, prescribes 'Class A, B, C or G airspace', means the airspace as notified by the Director General'.

[7] Rule 140(1), 'Unmanned Aircraft System', Malaysian Civil Aviation Regulations 2016, mentions 'No person shall fly an unmanned aircraft system : (a) in Class A, B, C, or G airspace; (b) within an aerodrome traffic zone; and (c) at the height of more than 400 feet above the surface of the earth, unless authorised by the Director General and shall be subject to the requirements as may be determined by the Director General.'

[8] Rule 140(3), 'Unmanned Aircraft System', Malaysian Civil Aviation Regulations 2016, stipulates 'The person in charge of unmanned aircraft system shall not cause or permit any article or animal whether or not attached to a parachute to be dropped from the unmanned aircraft system'.

[9] Rule 141(1), 'Aerial work involving unmanned aircraft system', Malaysian Civil Aviation Regulations 2016, reads 'No person shall fly an unmanned aircraft system for the purpose of aerial work without the authorization from the Director General'.

[10] Rule 141(2), 'Aerial work involving unmanned aircraft system', Malaysian Civil Aviation Regulations 2016, mentions 'An application for the authorization under sub-Regulation (1) shall be made to the Director General in accordance with Regulation 189.'

[11] Rule 142(1), 'Small Unmanned Aircraft', Malaysian Civil Aviation Regulations 2016, states 'The person in charge of a small unmanned aircraft may fly the small unmanned aircraft if he is satisfied that the flight can safely be made'.

[12] Rule 142(2), 'Small Unmanned Aircraft', Malaysian Civil Aviation Regulations 2016, prescribes 'The person in charge of a small unmanned aircraft shall maintain direct and unaided visual contact with such small unmanned aircraft sufficient to monitor its flight path in relation to other aircrafts, persons, vehicles, vessels, and structures for the purpose of avoiding collision'.

[13] Interpretation Part 'small unmanned surveillance aircraft', Malaysian Civil Aviation Regulations 2016, defines it as 'a small unmanned aircraft which is equipped to undertake any form of surveillance or data acquisition'.

[14] Rule 143(1), 'Small unmanned surveillance aircraft', Malaysian Civil Aviation Regulations 2016, states 'No person shall fly a small unmanned surveillance aircraft in any of the following circumstances without the authorisation from the Director General: (a) over any designated area; (b) within 150 metres of any designated area; (c) over any assembly in the open air of more than 1000 persons; (d) within 150 metres of any assembly in the open area of more than 1000 persons; (e) within 50 metres of any vessel, vehicle or structure which is not under the control of the person in charge of the aircraft; (f) within 50 metres of any person; and (g) within 30 metres of any person during take-off or landing.

[15] 'Designated area' means any area used for residential, commercial, industrial or recreational purposes. Rule 143(3), 'Small unmanned surveillance aircraft', Malaysian Civil Aviation Regulations 2016, explains 'For the purpose of this regulation, 'designated area' means any area which is used for residential, commercial, industrial, or recreational purpose'.

[16] Rule 143(2), 'Small unmanned surveillance aircraft', Malaysian Civil Aviation Regulations 2016, imposes the rule of, 'An application for the authorisation under sub-Regulation (1) shall be made to the General Director in accordance with Regulation 189.'

[17] Rule 144(1), 'Unmanned aircraft system of more than 20 kilogrammes', Malaysian Civil Aviation Regulations 2016, states 'No person shall fly an unmanned aircraft system having a mass of more than 20 kilograms without its fuel, without the authorization from the Director General'.