Disarmament Committee

Addressing the rise in Unmanned Aerial Vehicle (UAVs)

MODEL UNITED NATIONS
THE INTERNATIONAL SCHOOL OF THE HAGUE

Ellie Tokpa

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Student Officer:	Elie Tokpa
Position:	President of Disarmament Committee

Introduction

The first Unmanned Aerial Vehicles appeared in July 1849. It was a military balloon invented by the Austrians, it was capable of dropping bombs, however the bombs rarely reached their targets. During the 19th century UAVs were used as military training gear. This quickly changed when during the 1st World War the Dayton-Wright-Airplane Company developed the pilotless aerial torpedo. During the second World War 15000 RC-Controlled planes were built, but the intent of those planes were not to attack or defend an army. The first time UAVs were really used for combat was in 1964 by the US Army in the Vietnam war. However, the American government at the time did not admit owning any UAVs when confronted by China. As we can see, UAVs have mainly been developed for military purposes, however since the beginning of the 21st century we have seen an unprecedented rise of UAVs, especially on the non-military market.

The rise of UAVs is a crucial issue of the 21st century, as it revolutionizes a lot of different industries, whilst still facing a lot of problems on many levels. With the technologies that have been developed in recent years a major war without the implication of drones is unthinkable, however these new technologies can be very dangerous as they are something we have never experienced before. Furthermore, the UAVs are going to affect civilians more and more as the years go by. That is why a legal framework is required to supervise these new technologies.

Definition of Key Terms

Unmanned aerial vehicle (UAV)

Unmanned aerial vehicles (UAVs) are aircrafts without any humans on board. This means that UAVs are either controlled by a ground-based-controller and a communication system between the human and the UAV, or autonomously by one or multiple onboard computers. A

UAV uses aerodynamic forces to provide vehicle lift, missiles are not considered UAVs because they are not reusable. Cruise missiles differ from UAVs as they are munition, whereas military UAVs often carry munitions, they are never the munition itself. UAVs are also commonly known as drones, or Unmanned Aircraft Systems UASs.

Pilotless aerial torpedo

The pilotless torpedo is a naval weapon that appeared during the first world war. This American invention is a pilotless plane that is able to drop torpedoes approximately 1.800 meters away from an enemy ship. The American army did not like this idea at first sight, which explains why they only started using aerial torpedoes in 1921. However, the American army preferred to rely on humans to navigate their through the bullets, and projectiles of the second World War.

Autonomous drones

Autonomous drones are UAVs that do not need direct human communication to function. However the definition of autonomous drones is not universal. Most countries base themselves on the british definition which considers that an autonomous drone is a drone that is "…capable of understanding higher level intent and direction" (UK MoD, The UK Approach to Unmanned Aircraft Systems, 2011)

Remotely piloted aircraft (RPA)

Remotely piloted aircraft (RPAs) are unmanned aerial vehicles under the control of a human operator.

General Overview

The Sudden Rise of UAVs

The rise of UAVs is unprecedented, and it is very particular because it hit the eye of the public very suddenly. During the 20th century UAVs were almost unheard of for the general public. The sole purpose of UAVs were their military use, thus the development of drones was very secretive. The United States of America had a specific highly classified program to develop UAVs, it was called the "Red Wagon". This contrasts with the emergence of non-military drone during the 21st century. The drone market has been invaded by non-military UAVs, in 2015 alone more than a million drones were sold. Because of this incredibly fast rise of UAVs on the market, drones are considered to be a relatively new technology, even though they have existed for years in the military sector. The tedious years spent

behind closed doors are what allowed this technology to rise extremely fast. The number of drones having skyrocketed during the ten last years, very little legal infrastructure was in place to supervise the usage of drones. This led up to laws being made in a hurry, and in some cases very inexact and unsuitable to solve the issues at present.

Revolutionizing a significant number of industries

UAVs have changed a significant amount of industries, and the way people live. The sectors of the global economy most affected by the rise of UAVs are the secondary sector, and the tertiary sector. The usage of UAVs unites different industries that other than using drones have no common features. The rise of UAVs have affected the cinema industry in a major way. Thanks to UAVs we now have flying top-of the-range cameras that are able to shoot scenes that would have been impossible with a helicopter or a pole. This new cinematographic aspect of using UAVs has allowed drones to be useful in various sectors like sports analytics. But on a bigger scale drones are very convenient in agriculture, some drones are specifically developed to spray pesticides on crops. Furthermore, UAVs are being used in construction sites to facilitate the planning and the construction of new edifices, on a similar approach UAVs are also used to map regions. UAVs can be life saving, for example during Hurricane Katrina the American army used its MQ-9 UAV to find the location of survivors and hereby save lives of the people who were in distress. Postal services are also very interested in drones, businesses like Amazon are planning to rely on drones to deliver the last mile. Amazon is looking forward to implement drones into their shipping in order to have a same day shipping option for its customers. However, the same way postal drones are used to carry packages, UAVs can be used for smuggling illicit products. During the last decade the US border patrol has intercepted several drones carrying drugs from Mexico to the United States of America. In this instance drones can have a very detrimental purpose.

Running the risk of war

The kind of wars we know, and have known for decades are changing. UAVs play a big role in those changes. Since armies no longer need to send soldiers to be able to attack a certain region, certain rules of warfare are being disregarded. We can see this happening when the United States of America attack terrorist groups in the middle east, sometimes causing casualties amongst civilians. The United States of America have the biggest army in the world, which has influences on other armies like the french one. Lately, we can see that those armies having perpetrated a number of attacks against terrorist groups. But as they use UAVs to commit these attacks against terrorist groups, the armies in question have been less willing to take responsibility. Furthermore, drones are making killing easier, whilst

protecting the operator which can be thousands of miles away if the UAV happens to be an RPA.

Invading airspace

Less related to war and more about security, is the airspace that UAVs use. Airspace is a complex issue, and a complicated one to target at an international level, as each country has their own legislation. However, this legislation needs to be refined in order to be effective. We face issues regarding the airspace drone and aviation share. Issues of drones blocking air traffic have been recorded multiple times. For example, in December 2018 UAVs had been spotted near Gatwick airport in London. This blocked the airport for several hours and took three days for air traffic to get back to normal. Drones are not only a problem for airports some cities prohibit flying over them completely. Paris is one of those cities making its airspace extremely restricted but free of UAVs. In February 2018 a non-military UAV made a helicopter crash in South Carolina in the United States of America. This concern about UAVs is very legitimate as they can be dangerous to other aircraft, and be used for bad intentions.

Risks related to spying

Drones are seen in a critical manner by many, and this is totally justified given the privacy issues that UAVs have caused in the past. Today, the Federal Aviation Association (FAA) does not restrict or regulate flying drones over residential areas, as long as the UAV is not directly flying over people. This causes a major privacy issue as drones equipped with a camera can easily spy on someone and invade their privacy. For police purposes this is perfect as a drone is way cheaper than a helicopter, and a lot quieter, making it easy to have a city monitored by drones. However, from a citizens point of view this can be extremely worrying, knowing that you are being watched almost at all times. Not only do citizens distrust espionage by drones, but so do various governments. The 20th June 2019 Iran shot down an American UAV, Iran claims the drone was penetrating its airspace, however the US claims it was not. Whatever the real reason is behind this attack we can still note that the American UAV, RQ-4A Global Hawk, is estimated to be worth 220 million USD because of its very expensive surveillance equipment. We can deduce that surveillance and espionage is very important for military drones even though we have very little information about it.

Major Parties Involved

Canada

Canada is a country that has shown a lot of interest for UAVs. Indeed, the North American country has recently bought UAVs to monitor its arctic territories. Canada is looking forward to buy even more drones, but this time specific ones that are able to fly at 20,000 meters above sea level. Canada claims wanting these drones to salvage its Arctic sovereignty ambitions. In addition to this, Canada has a very specific legislature regarding who can fly a drone in its skies. Anyone who does not own a drone pilot license, or a more competent pilot license, is not allowed to fly a drone at all. However, despite a lot of criticism coming from drone owners this new legislation that is set in place since May 2019, it allows drone pilots a lot more freedom once they have a license. It raises awareness about the potential risks, such as spying, and invading airspace.

United Kingdom

The United Kingdom has recently had a lot of issues with drones. London has been subjected to multiple issues with UAVs and airports. London Gatwick airport has been shut down, in December 2019 because of a drone flying in its surroundings. This cost the airport huge delays, approximately a thousand flights, and 140,000 people have been affected by this issue. The british army had been deployed to take care of the situation, but it did not help find the offender. Two suspects were interrogated and later released. This led to significant amounts of money being lost, for the airport as well as the airline companies. The same scenario replayed itself early 2019 in Heathrow however the airport was on a stand still for only a couple of minutes. As a result of this problem, these two London airports have decided to invest over ten million pounds on a better system to prevent any situations like these to reproduce themselves.

United States of America

The United States and Iran have been making the headlines most major newspapers lately because of their diplomatic face off. This puts military drones in a spotlight. Indeed, UAVs have become a major part of the US army. Even though the general public is not aware of the magnitude of the US army's attacks with UAVs, it is aware of some major attacks. For example, the US army led 284 air strikes with drones in Yemen, causing

between 1362 and 1753 casualties.For this reason we can see that the rise of non-military
UAVs have distracted from the dangerous nature of UAV use in the military.

Timeline of Key Events

Date	Description of event
July 1849	The first UAVs were used in a battle. The Austrians developed an unmanned balloon capable of carrying and dropping a bomb, that they used in 1849 against Venice.
1953	After a series of tests, the American army decides to use UAVs for espionnage purposes in Communist China.
1960	This year marks the start of a highly classified program, by the American army called ; "Red Wagon".
1964	This Year marks the first use of UAVs in a war. The UAVs had been used by the American military. However, the American government never recognized the use of UAVs in this war.
1961	The American army uses their newly acquired UAVs to spy on their enemy, North Korea.
1984	In 1984, UAVs attract more and more attention. Defense Advanced Research Projects Agency (DARPA), North Atlantic Treaty Organization (NATO), and the US army show their interest for UAVs. DARPA invests 40 million USD into the development of a new drone called Amber.
2005	Unmanned Aircraft System Roadmap 2005-2030. This roadmap provides a basis for all that is to come regarding upcoming technologies linked to UAVs. This roadmap has also allowed to specify some technical vocabulary, and create a consensus for the definition of specific terms.
31st December, 2015	2015 marks a new milestone in UAV history. With more than 1 million civilian drones sold in a year on the market, the UAV market makes a drastic shift from military equipment, to civilian and leisure use.
2015	The Drone Racing League (DRL) was founded in 2015, and saw its first professional races take place in 2016. Since then, flying drones has become an official airsport.

| 15th February, 2018 | The first major crash due to a civilian UAV. The 15th February 2018, in South Carolina, a drone approached a helicopter causing it to do special maneuvers that led to the crash of the helicopter. |

UN involvement, Relevant Resolutions, Treaties and Events

● Resolution 1441 (2002) / adopted by the Security Council at its 4644th meeting, 8 November 2002 (S_RES_1441)

● Ensuring use of remotely piloted aircraft or armed drones in counter-terrorism and military operations in accordance with international law, including international human rights and humanitarian law : resolution / adopted by the Human Rights Council, 15 April 2014 (A/HRC/RES/25/22)

● Ensuring use of remotely piloted aircraft or armed drones in counter-terrorism and military operations in accordance with international law, including international human rights and humanitarian law : resolution / adopted by the Human Rights Council, 8 April 2015 (A/HRC/RES/28/3)

Previous Attempts to solve the Issue

The rise of UAVs being a recent occurrence means that the United Nations have made few attempts at resolving the issue, albeit their being slight progress. In 2002 a resolution that passed in the Security Council defined UAVs, and what exactly their legal status should be. This resolution laid the first stone for what is going to be the solutions to tackle this issue. However, UAVs where not a priority for the United Nations. Thus, only a few small steps have been made to tackle the issue since 2002. One of those steps was a study on Armed UAVs done by the United Nations Office for Disarmament Affairs (UNODA). This study helped to put light on a subject that was not talked about very often at the United Nations. It helped to shape future debates and ideas on armed UAVs. It led to a resolution that demands member states to adhere to the disarmament obligations,made by the UNODA. Some of these obligations emphasize the ownership of countries committing attacks with armed UAVs. This allows the United Nations to point a finger on countries who do not follow the rules established. Such as France, and the United States of America.

Possible Solutions

As the issues regarding the rise of UAVs vary greatly, these possible solutions are only suggestions, but in no way intended to limit them.

The Canadian legislature that requires any drone pilot to have a pilot license solves some of the issues linked to UAVs. These laws prevent beginner accidents, as well as putting a framework to avoid any crashes with other air traffic. They require all pilots of any type of aircraft to always be connected to the local air traffic radio, allowing all pilots being aware of the surrounding hazards. The pilot license can scare away some drone addepts, however, it allows pilots who do possess a drone to have more freedom with the places they use their drone in. This system that is set in place in Canada allows to responsibilize drone pilots while giving them more freedom. This win win situation could be applied on a larger scale.

It is a necessity for the United Nations to address the question of privacy. Some UAV pilots have an invasive behavior in the way they fly their UAV. Since the FAA is not taking care of this issue it is necessary for the United Nations to take some sort of action. Feasible measures could be creating a legal framework, to supervise that UAVs do not endanger the privacy of individuals. This allows us to think of specific measures that would be able to hinder any invasive behavior. This legal framework could include a regulation on areas that are prohibited to fly over without a permit for any UAV, for example airports. Like all laws there is also the need for coherent sanctions, for those who do not respect them. A plausible sanction could be a fine that depends on the severity of the infraction. However, other kinds of sanctions should not be neglected. Others possibly having a more beneficial effect on the perpetrator.

Armed UAVs have often had civilian casualties amongst their attacks. Even though technology is getting better and more precise, we need to protect civilians in times of war. To do so we can review the disarmament obligations written by the UNODA. Thorough work in cooperation with the UNODA would allow us to prevent excessive use of RPAs or autonomous drones.

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