ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

The Legality of the Use of Unmanned Aerial Vehicles (UAV) (Drones) for Military Purpose: The Ethiopian Perspective

By

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DECLARATION

I, Yeshewas Eshete, hereby declare that this research paper is original and has never been presented in any other institution. To the best of my knowledge and belief, I also declare that any information used has been duly acknowledged.

Name: Yeshewas Eshete

Signature:

This dissertation has been submitted for examination with my approval as Thesis advisor:

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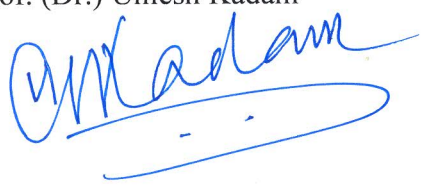
Signature: 

List of Abbreviations

AP I, II	Additional Protocols I, II
Art	Article/s
G.C I, II, III, IV	Geneva Convention I, II, III, IV
hr/s	Hour/s
IAC	International Armed Conflict
ICC	International Criminal Court
ICCPR	International Covenant on Civil and Political Rights
ICJ	International Court of Justice
ICU	Islamic Courts Union
IHL	International Humanitarian Law
IHRL	International Human Rights Law
INSA	Information Network Security Agency
NIAC	None-International Armed Conflict
Para	Paragraph
Res.	Resolution
UAV	Unmanned Aerial Vehicle
UDHR	Universal Declaration of Human Rights
UN	United Nations
US, USA	United States of America
USAF	United States Air Force

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First and foremost, Praise be to the Almighty God on whom I have always relied on and for the future, on upon whom I count on. LLD, here I come! Next I would not have reached this point without the support of my family, thank you for supporting me to see this through.

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Abstract

The Legality of the Use of Unmanned Aerial Vehicles (UAVs) (Drone); The Ethiopian perspective is a study that assess the legal framework governing the use of Drones by state actors like the Ethiopian government. This is so and remains significant because on one hand, the current state of affairs affirms that countries are increasingly importing Drone technology or at best producing it locally to modernize their respective military powers which in effect is having its own implications on their commitment towards the use force. On the other hand, the actual deployment of Drones particularly under the context of the fight against terrorism raises other questions of adherence to well established rules and principles of armed conflicts. These questions are not comprehensively addressed because the majority of scholars and experts are divided based on the different approaches regarding the applicability of the existing legal regimes of Jus ad Bellum and Jus en Belo. However, this study follows the complimentarity approach not only to disseminate the approach but also to be as comprehensive as possible in making the assessment and more importantly it is to establish that it is the right to life which is a none-derogable right that would be violated if the use of Drones is found to be unregulated or illegal.

Finally, because states do not only differ in their technological advancement and level of development but also in their sphere of international influence it is also to make recommendations appropriate to the practice in Drone use starting from states like the United States of America and then appropriate also with the stature of states like the Federal Democratic Republic of Ethiopia.

MQ-1B Predator

Published September 23, 2015

An MQ-1 Predator unmanned aerial vehicle and F-16 Fighting Falcon return from an Operation Iraqi Freedom combat mission. Both aircraft provide intelligence, search and reconnaissance gathering features, as well as munitions capability to support ground troops and base defense. (U.S. Air Force photo/1st Lt. Shannon Collins)

The Predator provides armed reconnaissance, airborne surveillance and target acquisition for Iraq.

An MQ-1 Predator armed with an AGM-114 Hellfire missile flies a training mission. The MQ-1's primary mission is interdiction and conducting armed reconnaissance against critical, perishable targets.

PRINT | E-MAIL

Mission

The MQ-1B Predator is an armed, multi-mission, medium-altitude, long-endurance remotely piloted aircraft that is employed primarily as an intelligence-collection asset and secondarily against dynamic execution targets. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons, it provides a unique capability to perform strike, coordination and reconnaissance (SCAR) against high-value, fleeting, and time-sensitive targets. Predators can also perform the following missions and tasks: intelligence, surveillance, reconnaissance, close air support, combat search and rescue, precision strike, buddy-lase, convoy/raid overwatch, route clearance, target development, and terminal air guidance. The MQ-1's capabilities make it uniquely qualified to conduct irregular warfare operations in support of combatant commander objectives.

Features

The Predator is part of a remotely piloted aircraft system. A fully operational system consists of four sensor/weapon-equipped aircraft, ground control station, Predator Primary Satellite Link, and spare equipment, along with operations and maintenance crews for deployed 24-hour missions.

The basic crew for the Predator is a rated pilot to control the aircraft and command the mission, and an enlisted aircrew member to operate sensors and weapons as well as a mission coordinator, when required. The crew employs the aircraft from inside the ground control station via a line-of-sight data link or a satellite data link for beyond line-of-sight operations.

The Predator carries the Multi-Spectral Targeting System, which integrates an infrared sensor, color/monochrome daylight TV camera, image-intensified TV camera, laser designator and laser illuminator. The full-motion video from each of the imaging sensors can be viewed as separate video streams or fused. The aircraft can employ two laser-guided missiles, Air-to-Ground Missile-114 Hellfire, that possess highly accurate, low-collateral damage, and anti-armor, anti-personnel engagement capabilities.

The remotely piloted aircraft system can be deployed for worldwide operations; likewise, the Predator can be disassembled and loaded into a container for travel. The ground control system and PPSL are transportable in a C-130 Hercules (or larger) transport aircraft. The Predator can operate on a 5,000 by 75-foot (1,524 meters by 23 meters) hard-surface runway with clear line-of-sight to the ground data terminal antenna. The antenna provides line-

of-sight communications for takeoff and landing. The PPSL provides over-the-horizon communications for the aircraft and sensors.

The primary concept of operations, remote split operations, employs a launch-and-recovery ground control element for take-off and landing operations at the forward operating location, while the crew based in the continental United States executes command and control of the remainder of the mission via beyond-line-of-sight links. Remote split operations result in a smaller number of personnel deployed to a forward location, consolidate control of the different flights in one location, and as such, simplify command and control functions as well as the logistical supply challenges for the weapons system.

The aircraft has an ARC-210 radio, APX-100 IFF/SIF with Mode 4, and upgraded turbocharged engine. The latest upgrades, which enhance maintenance and performance, include notched tails, split engine cowlings, braided steel hoses, and improved engine blocks.

Background

The Predator system was designed in response to a Department of Defense requirement to provide to the warfighter persistent intelligence, surveillance, and reconnaissance information combined with a strike capability.

In April 1996, the secretary of defense selected the U.S. Air Force as the operating service for the RQ-1 Predator system. The "R" is the Department of Defense designation for reconnaissance aircraft. The "M" is the DOD designation for multi-role, and "Q" means remotely piloted aircraft system. The "1" refers to the aircraft being the first of the series of remotely piloted aircraft systems.

A change in designation from "RQ-1" to "MQ-1" occurred in 2002 with the addition of the AGM-114 Hellfire missiles, enabling reaction against intelligence, surveillance, and reconnaissance, close air support, and interdiction targets.

The Predator remotely piloted aircraft system continues to provide required armed intelligence, surveillance, and reconnaissance capabilities to overseas contingency operations warfighters. During August 2011, the Predator surpassed one million hours of total development, test, training, and combat - a significant accomplishment for the U.S. Air Force.

General characteristics

Primary function: armed reconnaissance, airborne surveillance, and target acquisition
Contractor: General Atomics Aeronautical Systems Inc.
Power plant: Rotax 914F four-cylinder engine
Thrust: 115 horsepower
Wingspan: 55 feet (16.8 meters)
Length: 27 feet (8.22 meters)
Height: 7 feet (2.1 meters)
Weight: 1,130 pounds (512 kilograms) empty
Maximum takeoff weight: 2,250 pounds (1,020 kilograms)
Fuel capacity: 665 pounds (100 gallons)
Payload: 450 pounds (204 kilograms)
Speed: cruise speed around 84 mph (70 knots), up to 135 mph
Range: 770 miles (675 nautical miles)
Ceiling: 25,000 feet (7,620 meters)
Armament: two laser-guided AGM-114 Hellfire missiles
Crew (remote): two (pilot and sensor operator)
Unit cost: $20 million (includes four aircraft with sensors, ground control station and Predator Primary satellite link) (fiscal 2009 dollars)
Initial operational capability: March 2005
Inventory: total force, 150
Current as of September 2015

Point of Contact

Air Combat Command, Public Affairs Office; 115 Thompson St., Suite 210; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@us.af.mil

MQ-9 Reaper

Published September 23, 2015

The Reaper is larger and more heavily-armed than the MQ-1 Predator and attacks time-sensitive targets with persistence and precision, to destroy or disable those targets. (Courtesy photo)

Aircrews perform a preflight check on an MQ-9 Reaper before it takes off on a mission in Afghanistan Oct. 1. The Reaper is larger and more heavily-armed than the MQ-1 Predator and attacks time-sensitive targets with persistence and precision, to destroy or disable those targets. (Courtesy photo)

An MQ-9 Reaper sits on a ramp in Afghanistan Oct. 1. The Reaper is launched, recovered and maintained at deployed locations, while being remotely operated by pilots and sensor operators at Creech Air Force Base, Nev. (Courtesy photo)

A maintenance Airman inspects an MQ-9 Reaper in Afghanistan Oct. 1. Capable of striking enemy targets with on-board weapons, the Reaper has conducted close air support and intelligence, surveillance and reconnaissance missions. (Courtesy photo)

An MQ-9 Reaper, armed with weapons such as GBU-12 Paveway II laser guided munitions and AGM-114 Hellfire missiles.

PRINT | E-MAIL

Mission

The MQ-9 Reaper is an armed, multi-mission, medium-altitude, long-endurance remotely piloted aircraft that is employed primarily against dynamic execution targets and secondarily as an intelligence collection asset. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons -- it provides a unique capability to perform strike, coordination, and reconnaissance against high-value, fleeting, and time-sensitive targets.

Reapers can also perform the following missions and tasks: intelligence, surveillance, reconnaissance, close air support, combat search and rescue, precision strike, buddy-lase, convoy/raid overwatch, target development, and terminal air guidance. The MQ-9's capabilities make it uniquely qualified to conduct irregular warfare operations in support of combatant commander objectives.

Features

The MQ-9 baseline system carries the Multi-Spectral Targeting System, which has a robust suite of visual sensors for targeting. The MTS-B integrates an infrared sensor, color/monochrome daylight TV camera, image-intensified TV camera, laser range finder /designator, and laser illuminator. The full-motion video from each of the imaging sensors can be viewed as separate video streams or fused.

The unit also incorporates a laser range finder/designator, which precisely designates targets for employment of laser-guided munitions, such as the Guided Bomb Unit-12 Paveway II. The Reaper is also equipped with a synthetic aperture radar to enable future GBU-38 Joint Direct Attack Munitions targeting. The MQ-9 can also employ four laser-guided , Air-to-Ground Missile (AGM)-114 Hellfire missiles, which provide highly accurate, low-collateral damage, anti-armor and anti-personnel engagement capabilities.

In its secondary role as an ISR asset, the MQ-9 is part of a system that support strike aircraft and ground commanders by acquiring and tracking dynamic targets or other useful intelligence. It is also capable of supporting a wide ranger of operations such as coastal and border surveillance, weapons tracking, embargo enforcement, humanitarian/disaster assistance, support of peacekeeping and counter-narcotic operations. Utilizing satellite communication links, the RPA can acquire and pass real-time imagery data to ground users around the clock, and beyond-line-of-sight (BLOS).

The remotely piloted aircraft can be disassembled and loaded into a single container for deployment worldwide. The entire system can be transported in the C-130 Hercules, or larger aircraft. The MQ-9 aircraft operates from standard U.S. airfields with clear line-of-sight to the ground data terminal antenna, which provides line-of-sight communications for takeoff and landing. The PPSL provides over-the-horizon communications for the aircraft and sensors.

The primary concept of operations, remote split operations, employs a launch-and-recovery ground control station for take-off and landing operations at the forward operating location, while the crew based in continental United States executes command and control of the remainder of the mission via beyond-line-of-sight links. Remote split operations result in a

smaller number of personnel deployed to a forward location, consolidate control of the different flights in one location, and as such, simplify command and control functions as well as the logistical supply challenges for the weapons system.

Background
The U.S. Air Force proposed the MQ-9 Reaper system in response to the Department of Defense directive to support initiatives of overseas contingency operations. It is larger and more powerful than the MQ-1 Predator, and is designed to execute time-sensitive targets with persistence and precision, and destroy or disable those targets. The "M" is the DOD designation for multi-role, and "Q" means remotely piloted aircraft system. The "9" indicates it is the ninth in the series of remotely piloted aircraft systems.

General characteristics
Primary function: find, fix, and finish targets
Contractor: General Atomics Aeronautical Systems, Inc.
Power plant: Honeywell TPE331-10GD turboprop engine
Thrust: 900 shaft horsepower maximum
Wingspan: 66 feet (20.1 meters)
Length: 36 feet (11 meters)
Height: 12.5 feet (3.8 meters)
Weight: 4,900 pounds (2,223 kilograms) empty
Maximum takeoff weight: 10,500 pounds (4,760 kilograms)
Fuel capacity: 4,000 pounds (602 gallons)
Payload: 3,750 pounds (1,701 kilograms)
Speed: cruise speed around 230 mph (200 knots)
Range: 1,150 miles (1,000 nautical miles)
Ceiling: Up to 50,000 feet (15,240 meters)
Armament: combination of AGM-114 Hellfire missiles, GBU-12 Paveway II and GBU-38 Joint Direct Attack Munitions
Crew (remote): two (pilot and sensor operator)
Unit cost: $64.2 million (includes four aircraft, sensors, GCSs, and Comm.) (fiscal 2006 dollars)

Initial operating capability: October 2007
Inventory: total force, 93

(Current as of September 2015)

Point of Contact
Air Combat Command, Public Affairs Office; 115 Thompson St., Suite 210; Langley AFB, VA 23665-1987; DSN 574-5007 or 757-764-5007; e-mail: accpa.operations@us.af.mil

DJI Phantom 2 being used by local TV Crew

Ethiopian Television Corporation, Crew filming on February 15, 2017 in front of AAU entrance.

The TV Crew is filming with what seem to be a DJI Phantom 2 Drone.

According to some members of the Crew filming using Drone has been “allowed” since one year. However, no specific regulation could be cited, except that the Ministry of Culture and Tourism has allowed it. The rules for filming are apparently what applies to an ordinary camera.

The Ministry of Culture and was subsequently visited to request for details but the response was that for filming in Addis Abeba, it is the Addis Abeba City Administration who gives permite.

Phantom 2 Drone

Phantom 2 Drone with control set

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The Guardian, at (https://www.theguardian.com/world/2007/jan/13/alqaida.usa 13 January 2007) accessed on March 14, 2017.

The Reporter (Addis Ababa), Ethiopian Gov't to Draft Drone Law (7 November 2015) at (http://allafrica.com/stories/201511160760.html) accessed on July 19, 2016.

Sudan Tribune, 14 February 2013, 'Ethiopia produces first military drone aircraft', online article (14 February 2013) at (http://www.sudantribune.com/spip.php?article45518) accessed on July 28, 2016.

5.Web Articles

BlueBird, Africa; 'Undisclosed client orders BlueBird Spylite UAV', http://www.bluebird-uav.com/hello-world- visited last 20, 2016.

Chris Cole, Rise of the Reaper: "A brief history of drones", (2014 Drone Wars UK) at (https://dronewarsuk.files.wordpress.com/2010/10/conv-killing-final.pdf,) accessed on February 24, 2017.

Davies, Nicolas J. S. "The Caroline Case and American Drone Strikes in Pakistan", Taylor & Francis Group, LLC, Peace Review: A Journal of Social Justice, (London, Routledge Publisher 2009)21:429–436 at (http://www.colonelby.com/teachers/krichardson/Grade%2012/Carleton%20-20Int%20Law%20Course/Week%204/CarolineCase.pdf) accessed on March 17, 2017.

Evan Baldwin Carr, "Unmanned Aerial Vehicles: Examining the Safety, Security, Privacy and Regulatory Issues of Integration into U.S. Airspace" (2013) at (http://www.ncpa.org/pdfs/sp-Drones-long-paper.pdf) accessed on February 16, 2017

Kathleen E. Powers, Killing at a Distance: A Construal Level Approach to the Psychology of Drone Operation (Dickey Center for International Understanding and Dartmouth College, 2015) at (www.kepowers.com/.../Powers-KillingataDistance-APSA2015.pdf) accessed September 24, 2016.

Rob Wise, Al Shabaab, Center For Strategic & International Analysis, Homeland Security & Counterterrorism Program, (Case Study 2, Jull 2011), at (www.CSIS.Org/) visited last on March 09, 2017.

The Bureau Investigates, 'US and UK covert operations in Somalia 2001-2017', (https://www.thebureauinvestigates.com/drone-war/data/somalia-reported-us-covert-actions-2001-2017) visited last on February 04, 2017.

6.Website

Arms Control, www.armscontrol.ru,

Blue Bird, http://www.bluebird-uav.com/hello-world-2

FDRE Civil Aviation Authority website www.ecaa.gov.et/

Global Security website, http://www.globalsecurity.org/

Metal and Engendering Corporation website http://www.metec.gov.et/

New America, www.newamerica.com

The Bureau Investigates, http://www.thebureauinvestigates.com

United States, Air Force, http://www.af.mil/AboutUs/FactSheets/

7.Interviews

Interview with Ato Haish Beyene on 25-07-2016 representative of the Head of Department and data obtained from on July 29, 2016 from another colleague.

Interview with Ato Tsegaye Habtu, owner and Manager of GeoMarks System PLC on May 09, 2016 and again on May 12, 2016.

Interview with Ato Shambel Tilahun, Media Relations Team Leader of the Government Communications Agency on 19 June 2017.

Interview Questions for Semi-structured Interview

A. Interview Question for Federal Civil Aviation Authority

1. Are UAVs/Drones being used in Ethiopia?
2. Are there any practical experiences?
3. What is the Authority's role or jurisdiction?
4. What is the existing regulatory system?
5. Are there plans to put in place a formal rules and regulations?
6. Do you consider the look at the experiences of other countries who are facing a similar challenge?
7. Do you have authority or all the territorial air space?
8. What is the military's role?
9. Are there other actors?
10. Is there overlapping or jurisdiction or authority?
11. If the Authority is to draft a law to regulate the use of UAVs, how will you go about it?
12. What are your challenges with regards to the use of UAVs so far?
13. Any additional information or suggestions?

B. Interview Questions for GeoMarks Systems P.L.C

1. What does your company do?
2. How are your activities related to Drones?
3. What is your experience with regards to the use of Drones?
4. What are the procedures to use Drones?
5. What kinds of Drones would you use?

6. How much would it cost you to import Drones? Can you cover the costs?
7. Do you have the technical know how to operate Drones?
8. What are the regulatory challenges to use Drones in Ethiopia?
9. What would you suggest for the future of Drone regulation in Ethiopia?
10. Any additional information or suggestions?

CHAPTER ONE

INTRODUCTION

1.1 Background

During the past 15 years, there has been a dramatic increase in the development and use of robotic systems by armed forces, in particular various armed unmanned systems that operate in the air, on land, and in water, including the high seas.[1] This tendency towards robotics is among others, attributable to the values in aiding and complimenting soldiers because the machines are obviously fearless and tireless, they can do repetitive tasks with comparable speed and precision and in the end they can avoid human casualty.[2]

More recent and more in particular to those operating in the air is again the dramatic increase in the use of Unmanned Aerial Vehicles (UAVs), commonly referred to as drones, by the military.[3] This reference, Drone, is a development that culminated with the De Havilland Queen Bee, a target drone produced between 1934 and 1943.[4] In terms of their use, UAVs can be used in different sectors, in the military alone other than for killing they can be used for Shadowing enemy fleets, Decoying missiles by the emission of artificial signatures and Relaying radio signals for the Navy; Reconnaissance, Surveillance of enemy activity and, Target designation and monitoring for the Army; Long-range and at high-altitude surveillance, Radar system jamming and destruction and Airfield base security for the Air Force, are only some.[5] In the civilian or non-military use as well, as a system they can be developed and applied to monitor soil erosion and crop maturity, mitigate frost, apply fertilizer in the Agriculture and Wildlife sector; measurement of geophysical processes associated with natural hazards like earthquakes and volcanoes, aerosols and gas levels in clouds, changes in the stratospheric

[1] *See* International Committee of the Red Cross(ICRC) *International humanitarian law and the challenges of contemporary armed conflicts*, Report of 32nd International Conference of the Red Cross and Red Crescent (October 2015) p. 44, at (http://www.icrc.org/eng/war-and-law/ International humanitarian law and the challenges of contemporary armed conflicts.htm) accessed on January 13, 2016 .

[2] *See* US, National Research Council, *Technology Development for Army Unmanned Ground Vehicle*, The National Academics Press, Washington D.C (2002) p. 13, at www.nap.edu last visited on July 04, 2016.

[3] *See* Kathleen E. Powers, *Killing at a Distance: A Construal Level Approach to the Psychology of Drone Operation* (2015, Dickey Center for International Understanding and Dartmouth College) p. 2.

[4] Evan Baldwin Carr, *"Unmanned Aerial Vehicles: Examining the Safety, Security, Privacy and Regulatory Issues of Integration into U.S. Airspace"* Unpublished

[5] *See* Reg Austin, Unmanned Aircraft Systems UAVs Design, Development and Deployment (2010) p. 2.

ozone chemistry, stratospheric pollution and air quality, water vapor, changes in the composition, vegetation, coral reefs and nutrients of coastal zones, oxygen and carbon dioxide levels in the air, vegetation structure etc for Earth Science; border surveillance along difficult terrain, more sustained border coverage and reducing the risk to border agents in Boarder Security; filming for the motion picture industry, relaying communications, acting as surrogate satellites, inspecting utilities including power lines, dams and bridges, supporting the news and media industries, aerial advertising, spotting fish for commercial operations, carrying cargo etc for the Commercial Sector.[6] The applications for the military may obviously be difficult to quantify in monitory terms; however the economic benefit of fully integrating UASs into for example the US national airspace system was reported to total more than $13.6 billion in the first 3 years of integration and grow to more than $82.1 billion from 2015 through 2025.[7]

Other countries more motivated by the military gains are embarking on either producing or obtaining the technology. Countries like Russia, China, Iran, South Korea, and Taiwan, for example, have begun to develop increasingly sophisticated indigenous drone capabilities.[8] Whereas countries including Pakistan, Turkey, Saudi Arabia, and the United Arab Emirates (UAE), have publicized their intent to purchase them.[9] Countries like Ethiopia on the other hand seem to do both, producing as well as buying.[10] It was reported in February of 2013 that the country had for the first time produced a multi-purpose UAV capable of performing a number of militarily and civilian applications.[11]Another report discloses that, BlueBird an Israeli company had won a contract in April 2011 to supply UAVs to the Ethiopian army, including its SpyLite and Boomerang designs.[12] Furthermore, the Boomerang is the only UAV powered by hydrogen fuel cells that is capable of delivering a flight endurance of over 10 hrs. The Boomerang can also carry a payload of up to 1.3kg (2.9 lb).[13]

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[6] Evan Baldwin above n (4) p. 14.
[7] United States Government Accountability Office**,** *Unmanned Aerial Systems: Report to Congressional committees* (July 2015) p. 1.
[8] Micah Zenko and Sarah Kreps, *Limiting armed Drone Proliferation, Council Special Report 69*, Council on Foreign Relations (June 2014) p. 3, at (http://www.cfr.org/drones/limiting-armed-drone-prolif) accessed on February 04, 2017.
[9] Ibid
[10] Facts will be illustrated in Chapter Four.
[11] *See e.g.,* Sudan Tribune, 14 February 2013, at (HTTP://WWW.SUDANTRIBUNE.COM/SPIP.PHP?ARTICLE45518) accessed on July 28, 2016); Tigrae Online, at (http://www.tigraionline.com/articles/article130227.html) accessed on July 28, 2016.
[12] Blue Bird at (http://www.bluebird-uav.com/hello-world-2) accessed on July 28, 2016.
[13] Ibid

Currently reports show that all continents of the Globe have UAVs: eight countries ranging from the United States to Nigeria in Africa have armed UAVs and used them; while eleven, many of which other than these eight, are developing; around 30 countries are producing armed UAVs.[14] In 2010, it was estimated that around 40 countries were using and/or developed UAVs.[15] By 2012 this figure got to 76 countries of the world.[16] In terms of usage, armed UAVs have been used by the US military in Afghanistan (since 2001), Iraq (since 2002), and Yemen (since 2002), by the CIA in Pakistan (since 2004), by the UK military in Afghanistan (since 2007) and by Israel in Gaza (since 2008). Undoubtedly, of the countries that used armed UAV in combat, the United States is the world's most prolific user.[17]

1.1.1 Case Study

On 11 September 2001, 19 terrorists seized control of four passenger aircraft in the United States.[18] Two were flown into the Twin Towers of the World Trade Center in New York City, a third was driven into the Pentagon in Washington D.C. and the fourth crashed in Pennsylvania following an unsuccessful attempt by passengers to regain control from the high-jackers. Roughly 3000 people of over 80 nationalities perished all together.

The US reaction was: within a week, President Bush formally proclaimed a national emergency and called up members of the reserve component of the armed forces and he also established the Office of Homeland Security and the Homeland Security Council in order to facilitate a coordinated response to the terrorist threat. Then the Congress passed a joint resolution that authorized the President to "use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or

[14] United States, United Kingdom, Israel, Nigeria, Iran, Iraq, Pakistan and Turkey, according to New America Foundation database, at (www.newamerica.com) last visited February 01, 2017.
[15] *See* Chris Cole, Mary Dobbing and Amy Hailwood, *Armed Drones and the 'Playstation' Mentality*, (2010) p. 3, at (https://dronewarsuk.files.wordpress.com/2010/10/conv-killing-final.pdf) accessed on February 24, 2017.
[16] *See* Non-proliferation, Agencies Could Improve Information Sharing and End-Use Monitoring on Unmanned Aerial Vehicle Exports, GAO Report, (July 2012) at (www.armscontrol.ru) last visited September 19, 2017)
[17] Micah Zenko and Sarah Kreps p .6, cited above at note 8.
[18] *See* Michael Schmitt, "*Counter-Terrorism and the Use of Force in International Law"* Fred L. Borch & Paul S. Wilson (eds.), International Law and the War on Terror , International Law Studies - Volume 79 , p.10, at (https://www.usnwc.edu/Counter-Terrorism-and-the-Use-of-Force) accessed on February 24, 2017.

harbored such organizations or persons, in order to prevent any future acts of international terrorism against the United States by such nations, organizations or persons." [19]

US authorities held responsible Osama bin Laden and his al Qaeda terrorist organization which was reported to operate from more than 60 countries through a compartmentalized network using operatives of numerous nationalities. The organization had allegedly been involved in the 1993 World Trade Center bombing, the 1998 bombings of the US embassies in Kenya and Tanzania (attacks for which Osama bin Laden has been indicted), and the attack on the USS Cole in 2000; the group had also claimed responsibility for the 1993 attack on US special forces in Somalia, as well as three separate 1992 bombings intended to kill US military personnel in Yemen.

Today, the Pentagon possesses more than seven thousand of these unmanned aircraft, compared to roughly a decade ago. Many are used exclusively for surveillance purposes, but increasing numbers of Predator and Reaper drones have been outfitted with missiles over the past decade. The U.S. military has used armed UAVs to carry out air strikes in Afghanistan, Iraq, Yemen, Somalia, and Libya, and by the CIA to execute targeted killings of suspected militants in Pakistan. The raw number of drone attacks illustrates this trend: Under President George W. Bush, there were 42 drone strikes from 2004 to 2008; by 2014, the Obama Administration has authorized 369 strikes in Pakistan alone.[20]

Reports indicate that Yemen is the place of the first lethal operation using a Predator drone on November 2002[21] where in Somalia the Pentagon's Joint Special Operations Command (JSOC) started cover 'war on terror' since 2001 but US drone strikes begun in June 2011[22] with the fooling Stats up to date.[23]

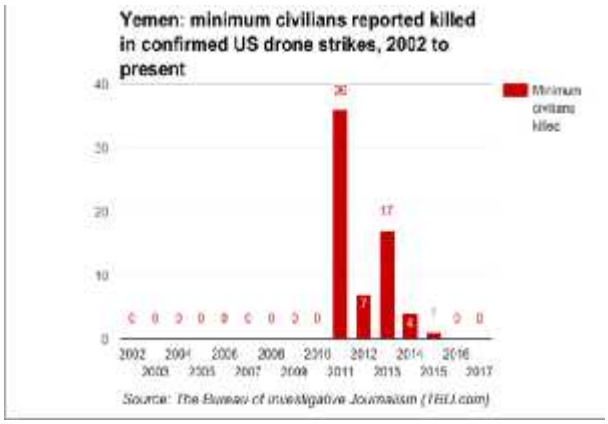
[19] Authorization for Use of Military Force (AUMF), Pub. L. No. 107-40, 115 Stat. 224 (2001) (authorizing the President to use "all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001 .."). As mentioned in, Captain Ronald T. P. Alcala (ed.), *The Army Lawyer,* The Judge Advocate General's Legal Center and School, Charlottesville, Virginia (June 2010) p. 112.

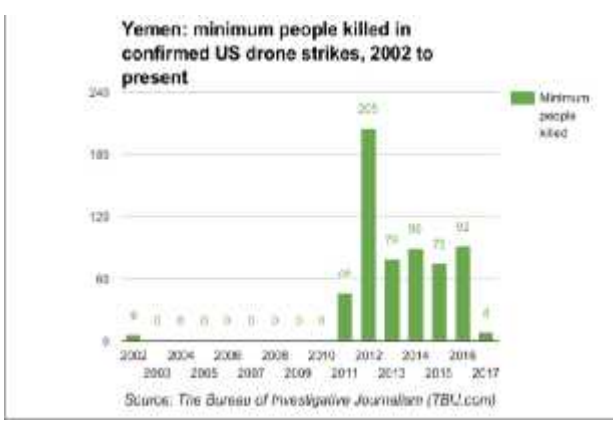
[20] Kathleen E. Powers, p.2, Cited above at note 3.

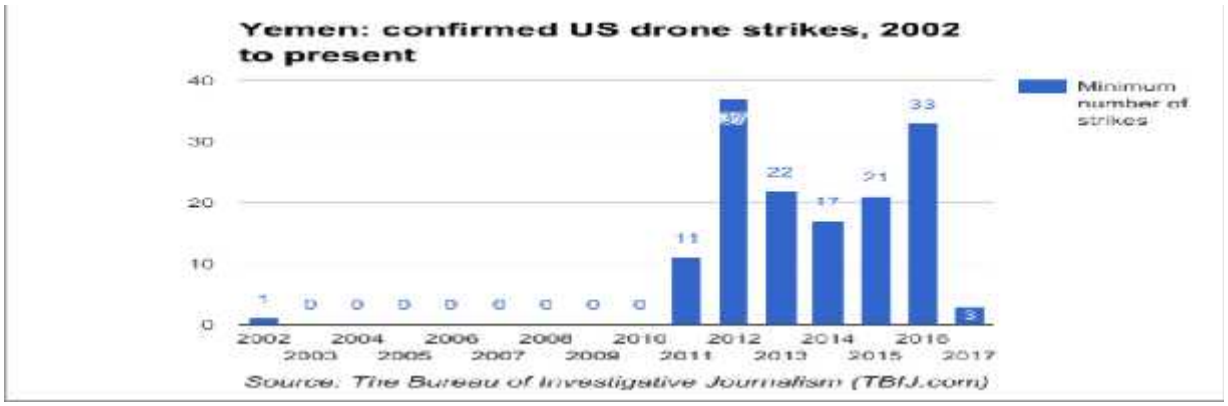
[21] *See* Chris Cole, *Rise of the Reaper: A brief history of drones*, (London, Drone Wars UK, 2014) p. 3, at (https://dronewarsuk.files.wordpress.com/2010/10/conv-killing-final.pdf) accessed on February 24, 2017.

[22] The Bureau Investigates webpage, at (http://www.thebureauinvestigates.com/2011/08/10/pakistan-drone-strikes-the-methodology2) last visited January 14, 2017.

[23] Ibid







Covert US operations, Somalia 2001-2016	US drone strikes	Additional US attacks
Total reported strikes:	**32-36**	**9-13**
Total reported killed:	**242-418**	**59-166**
Civilians reported killed:	**3-12**	**7-47**
Children reported killed:	**0-2**	**0-2**
Total reported injured:	**5-24**	**11-21**

1.2 Statement of the problem

While technological advancement has ushered inventions such as UAVs at human disposal the limiting case, however, is more likely to be legislation or public concern rather than technical constraint.[24]This is so because the matter ought to have been straightforward being that, if UAVs were used for military purpose or armed conflict the matter would be regulated by International

[24] Reg Austin p. 283, Cited above at note 5.

Humanitarian Law (IHL): the body of Public International Law applicable to the means and methods of warfare, which has been since 1864.[25] On the other hand given that UAV's application is not only limited to warfare but can also be used to eliminate individuals in a situation where there is no war or armed conflict then the applicable law would be the law on the use of force which is basically the UN Charter or Jus ad Bellum.[26] However, once the question of the applicable legal regime, be it Jus en Bellum and Jus Contra Bellum or Jus ad Bello is resolved, there is a further layer. Put in simpler terms, is of the question of weighing the rights to be protected by employing UAVs against its benefit or against the rights of those violated; in particular the lives of those taken to protect those affiliated with one's self.

On the other hand, beyond what the lawful and unlawful targets are, and the playstation mentality or the Psychological distance that contributes to the tolerance of the incidental or collateral damage[27] the deployment of UAVs for a targeted attack involves how and by whom the targets are selected and instruction given to it. The physical and Psychological distance is described for example by: "The drone pilots who fire missiles in Pakistan from computer terminals at Nellis Air Force Base (AFB) in Las Vegas operate at an infinitely greater remove from their victims and cannot possibly know for sure who they are firing at."[28] As mentioned above in the case of the US both the military and the CIA have been reported to deploy UAVs for such missions. Hence, the implication would then be in case of mistakes in the target that the machine would execute regardless, who would be responsible. This is so because the collaboration particularly in the fight against terrorism involves not only the military and the intelligence but may also of the militaries and the intelligence of other countries because it is a "Global fight". In other words "The nature of these attacks raises the specter of a new form of state terrorism: a global technological umbrella of airborne violence that can strike virtually anyone in any country based on secret rationales and suspicions that are beyond public scrutiny or accountability.[29]

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[25] Marco Sassòli, et al, How Does the Law Protect in War? Cases, Documents and Teaching Materials on Contemporary Practice in International Humanitarian Law, (3rd Edition) (Vol. 1 Chapter Three) p. 1, at (www.icrc.org) last visited January 14, 2017.

[26] The Charter of the United Nations came into force 24 October 1945, Art 2 and Preamble; here after UN Charter

[27] Chris Cole et al p.1, Cited above at note 15.

[28] Davies, Nicolas J. S. "The Caroline Case and American Drone Strikes in Pakistan", Taylor & Francis Group, LLC, Peace Review: A Journal of Social Justice, (London, Routledge Publisher 2009), p. 434, at (http://www.colonelby.com/teachers/krichardson/Grade%2012/Carleton%20-20Int%20Law%20Cours/CarolineCase.pdf) accessed on March 17, 2017.

[29] Id, p. 429.

1.3 Research Questions

The following questions are to be answered to assert the legality of military use of drones for targeting:

1) Does the existing Human Rights and Humanitarian Law regimes regulate UAV targeted Killings in light of the Global Fight against Terror?
2) What are the outstanding legal questions raised as a consequence of the use of UAVs?
3) What are the considerations for domestic regulation of UAVs if the existing International Legal regime lacks comprehensiveness?

1.4 Objective of the Study

The objectives of this paper are:

- Establish the legal base for UAVs as a machine or weapon as opposed to its use.
- Demonstrate the clash between the exiting International Legal System and the practice on the ground.
- By illustrating the existing legal debates, suggest some of the imperative considerations for establishing a domestic legal framework in view of the fact that Ethiopia has acquired UAVs.

1.5 Significance of the Study

The significance of the study lies in its contribution to the assessment of the legality of military UAV particularly in their use as a military weapon for targeted killing of those deemed terrorists. The research gives an analysis of possible applicable laws against the practice today and the alternative interpretations or justifications offered. Where the International Legal framework is found inadequate or disregarder while adequate enough to be applied, making a warning of the dangers and recommending the establishment of a domestic Legal framework so as to mitigate the challenge faced locally. Some countries have already engaged themselves in designing the domestic legal framework and are already identifying the challenges and the possible considerations of the substance of the laws. Taking the experiences of other countries recommendations will be made of the notable inputs.

Further, owing to the novelty of the technology and its use, there is not much literature particularly in Ethiopia on UAVs at all let alone as weapons inherently unlawful. Internationally it remains debatable

making this study just an addition but domestically it initiates the debate and calls for the attention of those concerned.

1.6 Scope of the Study

To substantiate the fact that UAV is the weapon of the time and that countries are racing to acquire the technology by one way or the other; and due to its convenience of clandestine in deployment and attack, only a proximate scenario is taken. Considering US strikes in Yemen marks the first lethal operation using a Predator drone and would limit the discussion to the arguments on the use of force based on declassified information, the qualification of an armed conflict where there is no direct link between those targeted and the September 11 incident and also due to its proximity to Ethiopia and in reference to Somalia the issues can be brought home to establish Ethiopian involvement.[30] As a case study the attacks on Yemen and Somalia are considered as the argument may be.

1.7 Limitations of the Study

This study is limited to the military use of UAV, not Civilian and for this purpose utilizes the declassified and information available to the public regarding the level of UAV technology and its deployments. For practical demonstration of the origins of such use and the suggested justifications, the September 11, 2001 attacks on the US and its subsequent reprisals involving UAVs along with the overall justification are considered. However, as not all the arguments of States and debates among scholars benefit the topic at hand and can be entertained under the circumstance, not all in their succession and fulsome are presented. Moreover, for the domestic use of UAV in Ethiopia the study is limited to the available information obtained from consented interviews and that which is available in writing. The written details will be scrutinized one against the other and sources availed for possible further verifications.

1.8 Definitions of Key terms and vocabulary

Unmanned Aerial Vehicle (UAV): means an unmanned aircraft of any size without any distinction to those not carrying weapons or those which carry and launch a weapon, or which can use on-board

[30] In Yemen, drone strikes target Ansar Al-Sharia whose more than 114 militants killed to date according to 'The Bureau Investigates, database and in Somalia targeting Al Shabaab as will also be detailed in Chapter Three.

technology to direct such a weapon to a target referred to as Unmanned Combat Aerial Vehicle (UCAV) or tactical UAV or Lethal UAV or other.[31]

For the consumption of this study UAV refers to two models of armed US made UAVs called MQ-1 Predator and MQ-9 Reaper UAVs that have the following features and capabilities.[32]

Reference: The "M" is the Department of Defense designation for multi-role (**strike**, **coordination** and **reconnaissance (SCAR)**, if it is reconnaissance only then "R"); and "Q" means remotely piloted aircraft system. The "1" and "9" refers to the series of remotely piloted aircraft systems.[33]

Contractor: First flying in 1994 and then as armed UAV in 2001 and 2007 respectively, the Predator and Reaper are designed and built by General Atomics Corporation in San Diego, California with a cost of 20 and 64.2 million USD per unit.[34]

Payload/Arms: While both being flow by two crew members remotely from the ground: a rated pilot to fly the UAV and the enlisted crew member to operate the weapons, the Predator is equipped with two weapon stations and can carry a combination of two Hellfire missiles, four small Stinger missiles and six Griffin air-to-air missiles. The Reaper's seven weapon stations can carry a combination of up to 14 Hellfire missiles, two 500-pound laser-guided Paveway bombs and 500-pound Joint Direct Attack Munitions bombs.

Performance: Predator with a wingspan of 48.7 feet and an overall length of 27 feet has a cruise speed of 81 to 103 mph and a range of 2,000 miles. Reaper with a wingspan that measures 66 feet and an overall length is 36 feet, has a cruise speed of 172 to 195 mph, nearly twice the Predator's and a range of 3,200 miles. Both UAV's have a normal service ceiling of 25,000 feet but Reaper has a maximum operational altitude of 50,000 feet.[35]

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[31] *See* Ian Henderson and Bryan Cavanagh, "Unmanned Aerial Vehicles: Do They Pose Legal Challenges?" Hitoshi Nasu and Robert McLaughlin (eds.) New Technologies and the Law of Armed Conflict (2014) Part 5, p. 194.
[32] Annex 1 & 2 provides additional details taken from USAF Fact Sheets and pictures downloaded from the internet.
[33] MQ-1 & MQ-9 Fact Sheets (2015) USAF webpage at (http://www.af.mil//FactSheets) last visited on March 16, 2017.
[34] Ibid
[35] Gus Stephens, *The Difference Between Predator and Reaper*, at (http://ourpastimes.com/difference-between-predator-reaper-8501986.html) accessed on February 04, 2017.

Unmanned Aircraft System: That system whose components include the necessary equipment, network, and personnel to control an unmanned aircraft.[36]

Targeted Killings: are premeditated acts of lethal force employed by states in times of peace or during armed conflict to eliminate specific individuals outside their custody.

Payload (aircraft ordnance)**:** the bomb load, warhead, cargo, or passengers of an aircraft, a rocket, missile, etc for delivery at a target or destination.

Precision Strike: Precision strike is the striking of an adversary while utilizing guided munitions.

Hellfire Missile: Hellfire is an air-to-ground, laser guided, subsonic missile with significant anti-tank capacity. The Air-to-Ground (AGM)-114 provides precision striking power against tanks, structures, bunkers and helicopters.[37]

1.9 Literature Review

Possibly attributable to the technology being new, Ethiopian Scholars and experts have not written on the legality or otherwise of Unmanned Aerial Vehicles. Within the academic circle of civilian institutions there is almost no scholarly writing taking up the issue, it is also the same with the Library of the Defense Commanders and Staff College here in Addis Abeba. During a visit to the Metal and Engineering Corporation's Public Relations and Legal Departments to get additional information on the matter, the response was for obtaining detailed information and possibly interviews; management has to allow it, which in the end did not seem to be the case.[38] Moreover, it was hinted that, information further than what is available on Brochures and website can be obtained if it is not classified. This possibly being another reason, from the public information that is available to be accessed by anyone not much if at all is written on the regulation of UAVs.

[36] US Department of Defense, Unmanned Systems Integration Roadmap,(2013), p. 4, at (archive.defense.gov/pubs/DOD-USRM-2013.pdf) accessed on March 23, 2017.
[37] USAF, factsheet, cited above at note 33.
[38] A request for an interview with the Head of Public Relation and/or the Head of the Legal department was made on March 20, 2017 because prior similar requests were not successful at the Air Force base at Bishoftu. The response given was that, contact will be made if it was possible and some brochures were availed. However, no calls from the office were made probably because it was not possible. One can only assume that the efforts to get interviews and additional information were not successful because the matter is probably classified.

At the International arena on the other hand, as the cause for the transformation of UAVs to an instrument of armed attack for targeted killing was the terrorist acts of 9/11 and the ensuing global war on terror, there is no consensus on the classification and qualification on the conflict. The perspectives of writers also differ between those writing from the IHL perspective and those from the IHRL aspect of the matter. Writers of the IHL camp, so to speak, either do not clearly argue that UAVs are legal as a weapon or not[39] or those who do and focus on weighting its adherence to IHL principles and rules.[40] Perhaps what can sum-up the entire debate and give the broader picture of autonomous weapon systems as a whole not only to UAVs which could share the features, is that"[t]here are different views on the adequacy of IHL to regulate the development and use of autonomous weapon systems".[41]

With regards to those focusing on IHRL the natural approach is not to dwell on the regulation of UAVs but rather the legality of targeted killing committed by UAVs under the context. Accordingly, for the string of scholars and experts who classify the global war on terror as an armed conflict, the initial terrorist attacks are of sufficient intensity to constitute an armed attack and apparently both the United States and the terrorists consider themselves being at war, thus targeted killing is justified.[42] For those convinced that the requirements for the right to self-defense do not exist specially since targeted killings in Pakistan, there is no war.[43]

Apart from these camps of Scholars and writers, there are those who fall in the middle arguing that it is impossible to determine the legality of Drone targeted killing on the account that there is only limited information disclosed.[44] However, shouldn't a further alternative be sought because the question remains to be that it is the right to life that is being violated, to protect it all possible resorts

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[39] *See, e.g.* Stuart Casey-Maslen, "Pandora's box? Drone strikes under jus ad bellum, jus in bello, and international human rights law", International Review of the Red Cross (2012) Vol. 94 No 886, p. 606, at (www.ICRC.org) accessed on March 07, 2017.

[40] *See, e.g*. Silvia Borelli, "Casting light on the Legal Black Hole: International Law Detentions abroad in the "War on Terror" International Humanitarian Law Reader, (2007) p. 536, at (www.icrc.org) accessed on March 07, 2017.

[41] ICRC, Autonomous Weapon Systems: Technical, Military, Legal and Humanitarian Aspects, Expert meeting Report (2014) p. 8, at (www.icrc.org) accessed on November 16, 2016.

[42] Thompson Chengeta, Are U.S Drone Targeted Killings within the Confines of the Law? LLM Dissertations, (2011) p. 7, at (http://www.ejil.org/pdfs/20/4/1936.pdf) accessed February 04, 2017.

[43] *See, e.g.* Nicolas J. S. Davies, "The *Caroline* Case and American Drone Strikes in Pakistan", Peace Review: A journal of Social justice (2009) 21: 4, p. 433 (http://www.colonelby.com/teachers/krich/GradeCarletonurse/WeekCarolineCase.pdf) Accessed on March 17, 2017; Akbar Nasir Khan, "Legality of Targeted Killings by Drone Attacks in Pakistan" SAN Analysis (2011) p. 8 , at (http://www.san-pips.com/download.php?f=76.pdf) accessed on February 25, 2017); Chengeta p. 7 Cite above note 42.

[44] Chengeta p. 9, cited above at note 43.

ought to be assessed and perhaps that is for this specific purpose making the analysis with both IHL and IHRL applying, complementing one another.

1.10 Organization of the paper

Adopting a qualitative research methodology with semi-structured interviews for additional inputs, the Thesis paper is divided into five chapters where the proceeding chapter Two and Three analyze the practical applications of the exiting legal regimes to the use of UAVs as it stands today. The practical experience is limited to the US's use of UAVs in Yemen for both chapters. Then chapter four takes up the situation in Ethiopia with reference to Somalia as well to further establish the growing trend and assess the regulatory system specially in fighting terrorism. Chapter Five comes up with the conclusion and makes the recommendation to be made.

CHAPTER TWO

THE USE OF FORCE WITH UNMANNED AERIAL VEHICLES

2.1 Introduction

In relation to the use of force, the conveniences of using Unmanned Aerial Vehicles, meaning their unique ability to hover for long periods over a target and react quickly to strike opportunities, all with no risk to a pilot, is making their deployments more frequently than other armed assets.[45] However this utility did not only attract popularity among the armies but also controversy which in the words of scholars of this platform: "*This has the potential to raise the number of armed interactions among states and increase—perhaps dangerously—the costs of misinterpretation and miscalculation on the part of governments.*"[46] One of such miscalculation and more importantly misinterpretations, as will be presented subsequently is in relation to the Principles of the Use of Force[47] and the available exception/s. This is while the rules of international law on the use of force "are relatively easy to state" as they "are to be found in the [UN] Charter and in customary international law."[48] Leaving the detailed historical account to a more relevant discussion, the historical antecedents to the modern prohibition on the use of force came in the form of the 1919 Covenant of the League of Nations and the 1928 Pact of Paris, which, when taken together, heralded a moment of 'high moral absolutism' in international relations translated into the prohibition of the use of force under Art 2(4) of the UN Charter.[49] The justification for such a prohibition is articulated in the preamble as an end "to ensure, by the acceptance of principles and the institution of methods, that armed force shall not be used, saves in the common interest."

Article 2(4) of the UN Charter stipulates "*All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.*"

As a result, under sensible circumstances governments are more cautious to "Put Boots on the Ground" because they would need justification. The justifications, according to the same instrument

[45] Zenko et al p. 7 Cited above at note 8.
[46] Ibid
[47] 1970 Declaration on Principles of International Law, as cited in Malcom N. Shaw, below note (56) P. 1123
[48] Michael Wood, "International Law and the use of Force: What Happens in Practice?" Indian Journal Of International Law (VOL. 53, 2013) p. 351, at (legal.un.org/avl/pdf/ls/Wood_article.pdf) accessed on March 16, 2017.
[49] *See* David Thomson, *Europe Since Napoleon* (1966), p. 678.

are to be in the form of the right to Self-Defense Art 51, Security Council Authorization Art 39 & 42 or in accordance to other Regional Arrangements Art 52 & 53 where Art 53 together with Art 107 do not apply today "against an enemy state."

Hence, leaving comprehensive arguments along the lines of the use of force transforming from Jus ad Bellum to Jus Contra Bellum or the development of the notion of Humanitarian Intervention as an exception and the question as to whether only inter-state use of force is prohibited and so own aside, the illustration of the practice today while touching up on such notions, as really not being in accordance to the existing legal framework is to only highlight the illegitimacy of the use of UAVs, if the right behind is itself not clearly legal. Otherwise, it is not the intention of this chapter to rehearse these sets of argumentation in all of their respective and fulsome detail.

2.2 UAVs under the Context or Pretext of Right to Self-Defense

This chapter entitled with such phraseology is to further emphasize the controversy[50] and more impotently refute the justification for the current use as being within the realm of executing the legitimate Right of Self-defense. Moreover, it is also not to insinuate that the relationship between UAVs and the right to self-defense is intrinsic, it is to highlight the flows as detailed below and direct attention towards seeking another avenue for regulating UAV use.

The notion self-defense that made UAVs "common sight in the battlefield"[51] is one of the exceptions to the use of force, prohibited by UN charter as discussed above. This exception under Art 51 of the Charter stipulates:

> *"Nothing in the present Charter shall impair the inherent right of individual or collective self-defence if an armed attack occurs against a Member of the United Nations, until the Security Council has taken measures necessary to maintain international peace and security. Measures taken by Members in the exercise of this right of self-defence shall be immediately reported to the Security Council and shall not in any way affect the authority and responsibility of the Security Council under the present Charter to take at any time such action as it deems necessary in order to maintain or restore international peace and security."*

[50] Chengeta p. 8, Cited above at note 38.
[51] Baldwin p. 4, Cited above at note 4.

From this articulation, we can conceive two requisite conditions for the recognition of the inherent right of individual or collective self-defense. These requisites are:

- when the action is in response to "an armed attack"[52],
- it is until the Security Council has taken measures necessary to maintain international peace and security.

Hence, at face value for a member state to invoke the right to self-defense in accordance to Art 51 it has to accordingly establish that it was provoked by an armed attack and the action taken in response is temporary. The interpretation of this article is a narrow one even thought there are those who despite it being so question it.[53] Moreover, as the Nicaragua (Merits) case, judgment para 176 and the oil platform case (by not referring to it) confirm in customary international law actions taken as self-defense remains subject to the Caroline requirements of necessity and proportionality.[54]

On the other hand, while the prerequisite to evoking the right to self-defense is comprehendible, in this matter where in, UAV is used today to attack targets in "The so-called War on Terror [that] may have begun on 11 September 2001"[55] is instigated by acts of terrorists more than 15 years now but justified by this very same right. The ensuing question that is naturally derived is then: "whether the right of self-defense applies in response to attacks by non-state entities?"[56]

The proximate Case law that would have shed light on the matter unfortunately did not address the matter as presented here below:

Instance one: In the Nicaragua Case

> *The difficulties arise in more ambiguous circumstances. In the Nicaragua case, the Court did not accept that the right of self-defense extended to situations where a third state had provided assistance to rebels in the form of the provision of weapons or logistical or other support, although this form of assistance could constitute a threat or use of force, or amount to intervention in the*

[52] It is of note that the meaning of armed attack pre 9/11 was narrowly defined as: even in cross boarder use of force by "regular armed forces" every such use was not an armed attack according to the Nicaragua case Para 195.
[53] *See, e.g*. Christian Grey, The Use of force and the International Legal Order, International Law, (2014) p. 589, at (media.library.ku.edu.tr/LAW%20302%20T./The%20Use%20of) accessed on March 16, 2017.
[54] DJ Harris, Case and Material on International Law, (2005) 6th ed. p. 886.
[55] Anthony Aust, Handbook of International Law, (2005) p. 283.
[56] *See* Malcolm N. Shaw, International Law, (6th ed. 2008) p. 1134.

internal or external affairs of the state. This lays open the problem that in certain circumstances a state under attack from groups supported by another state may not be able under this definition to respond militarily if the support given by that other state does not reach the threshold laid down.[57]

Instance two: In the construction of Wall case

The International Court in its advisory opinion in the Construction of a Wall Case appeared to adopt what at first sight is a very restrictive approach by noting that article 51 recognized 'the existence of an inherent right of self-defense in the case of armed attack by one state against another state' and declaring that the provision did not apply with regard to Israel's actions since these were taken with regard to threats originating from within the occupied territories and not imputable to another state. However, this cannot be read to mean that self-defense does not exist with regard to an attack by a non-state entity emanating from a territory outside of the control of the target state.[58]

Instance three: In the Republic of the Congo v. Uganda case

In this case, the Court found that there was no satisfactory proof of involvement in attacks, direct or indirect, on Uganda by the Congo government and that such attacks did not emanate from armed bands or irregulars sent by or on behalf of the Congo. Such attacks were non-attributable, therefore, on the evidence to the Congo. Since the Court concluded that the legal and factual circumstances for the exercise of a right of self-defense by Uganda against the Congo were not present, 'accordingly' there was no need to address the issue as to whether and under which conditions contemporary international law provides for a right of self-defense against large-scale attacks by irregular forces. Since the Court addressed itself only to actions that Uganda might or might not take against the Congo as such, it did not deal with the increasingly important question as to whether action might be taken in self-defense against an armed attack by a non-state actor as distinct from another state.

Hence, in terms of case law development, it remains to be that the prerequisites for self-defense, are the necessity (being instant, overwhelming, leaving no choice of means, and no moment for deliberation) and proportionality (not being unreasonable or excessive) in accordance to the Caroline

[57] Ibid
[58] Id p. 1134

Case. But when it comes to interpreting the sum of all of the jurisprudence towards the regulation of UAV use in today's fight against terrorism, a different, to say the least, approach is presented.[59] Perhaps this is so because targeting individuals and destroying property more than a decade and a half later and continuing for an undefined time could only be justified by an approach as the Bush Doctrine[60] and so but not self-defense that is necessary and proportional.

2.3 Other justifications for the use of force in accordance to the UN Charter

If not for self-defense the other justifications for the use force are via the United Nations Security Council's approval for doing so or in accordance to regional arrangements or agencies.[61] However, the Charter does not define 'regional arrangements or agencies' but the UN has accepted as the main regional organizations, the Organization of American States (OAS), the Organization of Africa Unity (OAU)(now African Unity) and the Arab League.[62] Moreover, it seems as the use of force under the stipulation of Art 52 & 53 is subject to Security Council approval it is not considered as an additional option.[63]

Regarding the use of force under the modality of explicit Security Council authorization[64] as stipulated by Art 39 & 42 it is not well exercised to be common practice. This is mainly because the original Charter scheme under Art 42 to Art 49 was that the UN would have its own standing army able to take measures involving the use of force.[65] But in practice member states did not conclude agreements to put troops at the disposal of the UN under Art 43 and no standing army was created.[66] The reason for this is obviously the Cold War dived.

The Cold War division and the Veto rights did not only hinder the establishment of a standing army but the subsequent chapter VII interpretation. This is because only the case of the Korean peninsula can be sighted in the case of Resolution 83 of 27 June 1950 before the end of the 80s. This resolution was issued to recommend to member states to furnish assistance to South Korea as may be necessary

[59] The Whitehouse, The National Security Strategy of the United States of America 2002, at (https://www.state.gov/documents/organization/63562.pdf) accessed on March 25, 2017.
[60] Ibid
[61] UN Charter Art 39 & 42 and Art 52 & 53 consecutively.
[62] Grey p. 614, Cited above at note 47.
[63] Wood p. 352, Cited above at note 38.
[64] There are writers for example like Christian Grey who argue that the US was granted implicit authorization to use for force in Resolution 1368 of September 12, 2001.
[65] Grey p.610 Cited above at note 56.
[66] Ibid

to repel armed attack and to restore international peace and security in the area while both the Koreas were not members of the United Nations.[67] Under its third paragraph the resolution stipulates that the council has noted that military measures are required because according to the report of the United Nations Commission on Korea, the authorities in North Korea have neither ceased hostilities nor withdrew their force to the 38th parallel. But even then the resolution opened gates for more debates than perhaps answering questions and develop the jurisprudence. There were heated debates on the legal bases for the action itself, there were also disagreement as to whether this was collective security under Art 39, 42 or Chapter VII generally or whether it was only authorization of Collective self-defense.[68]

After the Korean incident, it took the end of the Cold War for such instances to appear in the form of Resolution 687 of April 1991 first and then Resolution 1441 of November 2002 where the former was seen at the time as to mark the beginning of a new era for the Security Council, a New World Order.[69] But even then it did not explicitly authorize the use force against Iraq for its invasion of Kuwait. Under its authorization paragraph it authorizes the cooperation of all member states with the Government of Kuwait to use all necessary means to uphold and implement Resolution 660 (1990) and all subsequent relevant resolutions and to restore international peace and security in the area.[70] This statement cannot be viewed as an authorization to use force because it is obviously not explicit. More importantly though, if it is considered as so it would be like authorizing the Government of Kuwait to use force to defend itself, which the Security Council ought not to do because this right is already recognized by Art 51 of the Charter. However, writers like Christian Grey seem to consider that this is an authorization to use force.[71] Moreover, as Resolution 1441 of November 2002 does not also explicitly authorize the use force, it is thus compulsory to conclude that the UN Security Council does not use its power to explicitly permit the use of force.[72]

Hence, the remaining sources of legal justification for UAV use is the post 9/11 developments in the resolution decreed and lines of arguments posed by consecutive US Administrations. Again focusing on the resolutions, the most immediate is Resolution 1368 of September 12, 2001 which rather than

[67] Id P.609
[68] Ibid
[69] Ibid
[70] UNSC Resolution 678 of November 1990, Para 2
[71] Grey p. 609, Cited above at note 53.
[72] Art 24 and Art 25 of the UN Charter

opening the gates for an unrestricted use of force only reaffirmed the inherent right of individual or collective self defense. This would naturally follow from the condemnation of the act of the previous day as 'act of international terrorism, as a threat to international peace and security'. Resolution 1373 of September 28, 2001 which was based on the same fact repeated the same language by citing the right to self-defense and laid out steps to combat terrorism, such as suppressing the financing of terrorism, denying safe haven to terrorists and their accomplices, and cooperating in law enforcement efforts.[73]

Hence, as stated above what comes out of the Security Council could only be further reflection of the New World Order, which on the other hand is also a reflection the firmness in not expressly authorizing the use of force. 'In none of the resolutions did the Security Council explicitly authorize the United States, any coalition of forces, or a regional organization to use force pursuant to Article 42 of the Charter, as the Council is entitled to do in the face of a "threat to the peace, breach of peace or act of aggression".[74]

This would then redirect the assessment back to the argument of self-defense but with the input of the 9/11 terrorist attacks. If the UN Security Council did not expressly authorize the use of force employing all means, such as UAV as well, then the US as such a state ought to have offered a water tight argument that it is employing UAVs not only in Yemen against Al Qaeda, in Somalia against Al Shebab and others, on the grounds of Self-defense satisfying the Case Law and Customary Law criteria. Unfortunately, this is not the case. Hopefully the matter is only of preponderance of evidence and on their side of the argument but not as '*some have spoken of the abuse of legal standards, which have been developed over decades since the First World War*.'[75]

"He who fights against a monster should take care lest he becomes a monster himself."

Nietzsche, Beyond Good and Evil

[73] Resolution 1373, S.C. Res. 1373, pmbl. U.N. SCOR, 56th Sess., U.N. Doc. S/1373/(2001).
[74] Grey p. 609, Cited above at note 65.
[75] Andrew Williams "The Iraq War and International Law: By Way of an Introduction", in Phil Shiner and Andrew Williams (eds.), The Iraq War and International Law, (2008) p. 2.

CHAPTER THREE

UNMANNED AERIAL VEHICLE AND THE LAW OF THE USE OF FORCE

3.1 Introduction

If the use of UAV in such a forceful manner as in the fight against terrorism is not covered by the rules that regulate the resort to use of force, then the rules that regulate the means and methods of the use force ought to apply. If not, we are to surrender to the Roman orator Marcus Tullius Cicero's argument that "*Silent enim leges inter arma",* to mean that the laws are silent in the midst of clashes; in the face of arms, the law stands silent or when arms speak, the laws are silent.[76] The wiser approach also as compared to the customs and treaties making up *Jus ad Bellum*, is rather to accept war as a reality and regulated it by customs, treaties, protocols, regulations and so making up the *Jus en Bello* or the codified norms as International Humanitarian Law.[77] In a well known passage of his treatise W.E Hall has these words: "International Law has no choice but to accept War, independently of justice of its origin, as a relation which the parties to it may set up if they choose, and to busy itself only in regulating the effects of the relation." [78]

To examine the use of UAVs under this branch of Public International Law it would only require testing its adherence to the rules set by International Humanitarian Law (IHL) for the means, when UAVs are used as a weapon and for the methods, the way they are used in an armed conflict. However, this is to be done in consideration of an added challenge that the counterterrorism responses, combined with a robust counterterrorism discourse in both domestic and international fora, have significantly contributed to a blurring of the lines between armed conflict and terrorism, with potentially adverse effects on IHL itself.[79] Moreover, the prolific user of UAVs, the United States and its ally Israel along with a few other countries like India and Pakistan have not ratified Protocol I of 1977 Additional to the Geneva Conventions which applies to International Armed Conflicts,

[76] Sassòli et al, p. 3, Cited above at note above 25; Yonas Birmeta , *Introduction to International Humanitarian Law, Module I,* (unpublished AAU) p. 10
[77] Ibid
[78] Ibid
[79] See ICRC p. 17, Cited above at note 1.

apparently because it privileges certain guerilla strategy.[80] On the other hand, the US argues that in response to the terrorist attacks of September 11, 2001 the country is in an armed conflict and for this reason the President who has the Constitutional duty is authorized to employ all necessary and appropriate means.[81]

Hence, in consideration of such a robust stand of the US with regards to its post 9/11 lethal drone operations, this chapter evaluates the question of the legality of UAV use under IHL first as a weapon by applying relevant IHL rules disregarding the nature of the conflict and the combatants involved. Subsequently, it evaluates the nature of the conflict so as to determine the applicable law, thus the principles and imposed duties. As the contemporary way of thinking dictates, while classifying the conflict no consideration is made as to the cause or origins of the conflict because as will be discussed later it would not hinder the application of this branch of law.

3.2 UAV, as a Weapon: like any other Missile launcher

The designation of UAVs as multi-role (strike, coordination and reconnaissance (SCAR) by the US Air force[82] is not only testimony to it as being multi-purpose, but that indeed as a missile launching weapon like any other platform. If not for obscuring the classification of UAVs in general, as a mere intelligence gathering gadget or, a missile launching platform thus a weapon, it is their multi-role among other things that is making them popular.[83] However, when considering the payload features and operation of particularly the Reaper and Predator,[84] there would be no room for doubts as to such being a weapon. Hence as a weapon, it must be subjected to the multi-layered IHL rules of regulation, which the most general level, are general principles and rules which apply to all weapons and govern the acceptability or unacceptability of their use and at more specific level, a series of detailed conventions explicitly prohibiting particular weapons or classes of weapons.[85] As a result, we go through both levels of regulation, beginning from the general level which looks as follows.

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[80] Samuel Estreicher, "Privileging Asymmetric Warfare? Part I: Defender Duties under International Humanitarian Law", Chicago Journal of International Law, (Vol. 11, No.2 (2011) p. 428, at (http://chicagounbound.uchicagog) accessed on March 01, 2017.
[81] Chengeta, Cited above at note 50.
[82] US Air Force Cited above at note 33.
[83] *See* Chapter one of this paper.
[84] Id. p. 8
[85] Robert Kolb and Richard Hyde, An Introduction to the International Law of Armed Conflicts, (2008) p. 153.

Yet more general and perhaps sequentially prior, are the following two rules that can readily be alluded to from Art 35 and Art 36 of AP I.

Accordingly, the weapon bearer's duty begins from the recognition that having produced it as in the case of UAVs it does not entail using it as deemed fit. This is because as a general rule, 'the right of the Parties to the conflict to choose methods and means of warfare is not unlimited', as stipulated under Art 35(1) of AP I, and Preamble of the Saint Petersburg Declaration of 11 December 1868; Art 22 of The Hague Regulations of 29 July 1899.

Moreover in relation to the study, development, acquisition or adoption of a new weapon, means or method of warfare Art 36 of the same requires that:

"In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party."

As to the later duty fortunately, the US has maintained a weapons review procedure since 1974, however be it in adherence to this duty in AP I or not, is not clear given that the Protocol I came into effect in 1977.[86] On the other hand, it could also be an illustration of US claim to adhere to AP I to the extent it reflects Customary International Law (CIL) that it has maintained the procedure.[87] Again, having not interrupted the weapons review procedure and expressing adherence to AP I to the extent it reflects Customary International Law by the US could be taken up against it based on such recognition and practice that not only is AP I but the rules and principles of the entire IHL have attained Customary International Law status, thus not being ratified ought not to be raised.

Coming back to general level of rules of regulation that would apply to weapons and there use three, being:

[86] ICRC A Guide to the Legal Review of New Weapons, Means and Methods of Warfare, Measures to Implement Article 36 of Additional Protocol I of 1977, (ICRC, January 2006) www.icrc.org

[87] Estreicher Cited above at note 80.

One: Weapons and means which would render the death of adverse personnel inevitable are prohibited according to Para 4, preamble of the St Petersburg Declaration of 11 December 1868, Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grams weight.

It is not to insinuate here that UAVs are themselves or armed with explosive projectiles under 400 Grms rather the Hellfire missile mounted on UAVs is an anti-tank missile[88] that when such a caliber missile is fired at human being would most certainly render the death of those fired up-on inevitable. To even the odds a more proportionate fire power should have been sought until today. Otherwise, as practice has shown it is not only the death of an individual Al Qaida leader but also a wife, a child, parents or any other person who is just at the time and the wrong place during the attack by a UAV.[89]

Two: Weapons and means which would uselessly aggravate the sufferings of adverse personnel are prohibited, again as in the St Petersburg declaration.

As stated above the Hellfire missile of a UAV is an anti-tank that requires a hard surface to explode during impact. Thus, when fired up-on individuals, the only hard surface it would have is the ground those targets are standing own. So not only would it be able to penetrate and shatter the human body but it will then bury it during impact with the ground. [90]

Three: Weapons and means which have indiscriminate effects, hitting military and civilian objectives alike, are prohibited.

If anything at all the Hellfire fire missile of the UAV is not indiscriminant.

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[88] In an Interview given to David Kohn of the CBS 60 minutes TV program, General John Jumper, commander of the United States Air Force (USAF) in Europe since 1993 and then after 9/11 Air Force Chief of Staff, when asked about the Hellfire missile of the drone, admitted that: 'The warhead on the Hellfire missile was designed to penetrate the thick armor of a tank before detonating and it wasn't working well against softer targets. Jumper says it would go through the target and blow up the dirt underneath. Two months after the war in Afghanistan began, the Air Force called Chuck Vessels at the Army's Redstone Arsenal in Huntsville, Alabama, one of a handful of American engineers who designs and builds warheads. Vessels was faced with a tough problem: The Hellfire needed a new warhead, fast, so he didn't have time to open up the missile and start from scratch. He created an exterior sleeve that would send out shards of the missile when it hit its targets.' Chris Cole above n (21)

[89] The first Predator drone strike in Afghanistan on November 2001 targeting Mohammed Atef, dubbed the military chief of al-Qaida, did not only kill him but an additional 6 or 7 people as well. A year later in November 2002 in the first lethal operation using a Predator drone in Yemen targeting Qa'id Salim Sinan (Abu Ali) al-Harithi, allegedly one of those behind the suicide attack on the USS Cole in Port Aden in 2000, killed him along with 6 other people. Ibid

[90] Ibid

When it comes to the specific level of regulation or principles as its reference indicates, it is the prohibitions of specific kinds of weapons like expanding and exploding bullets, poisoned weapons, biological and bacteriological weapons, chemical weapons, weapons injuring by non-detectable fragments, booby-traps and like as stipulated under the respective rules between rule 70 and rule 86 of the ICRC study on customary international humanitarian law.

However, as these specific rules do not apply to the case at hand it requires no further discussion.

3.3 Duties of belligerents armed with UAV or else

The fact that the Bush Doctrine that has moralized the very concept of security and extended the spatial and time dimensions of American security strategy, considered on the very next day that the 9/11 attacks are more than "acts of terror", "They were acts of war' and as a result it led to the declaration of the "war on terror" that "will not end until every terrorist group of global reach has been found,[91] to say the least, only complicated the classification of the conflict and the combatants involved. As also witnessed in practice 'the war' has become an engagement whose duration is virtually indefinite and goals have continually expanded,[92] and whose method has relied heavily on RMA (Revolution in Military Affairs) transformation of the American military at the expense of other counter-terrorism measures such as diplomacy and intelligence.[93] In the end, it also left scholars and experts sharply differing on the legality of drone targeted killings primarily because they reach different conclusions on the qualification and classification of the conflict in which drones are operated.[94] The relevance of such classifications would ease setting up the stage for the application of IHL or the Law of armed conflict, that can be characterized by 'simplicity to the extent that its essence can be encapsulated in a few principles and set out in a few sentences.'[95]

[91] Heajeong Lee, "The Bush Doctrine: A Critical Appraisal", The Korean Journal of International Relations, (2003) Vol. 43 N0. 5, 2003/ 2, p. 1, at (http://kaisnet.or.kr/resource/down/1_02.pdf) accessed on March 25, 2017.
[92] Ibid; and US, National Security Strategy, Cited above at note 51.
[93] Lee, Cited above at note 91.
[94] Chengeta p. 8 Cited above at note 81.
[95] Sassòli et al Cited above at note 76.

Nevertheless, as the development of the major principles of IHL of humanity, distinction, military necessity and proportionality into customary international law has made the dichotomy between IAC and NIAC become superfluous, [96] the application ought to also be incontestable. As a result:

a) Principle of humanity

This principle that is stipulated under common Article 3 to Geneva Conventions I-IV; in Articles 12/12/13/27 of Geneva Conventions I-IV; and Article 4 of Additional Protocol II. According to the United States Navy Manual on the Law of Naval Warfare, published in July 1959, the principle of humanity is described as the principle that 'prohibits the employment of any kind or degree of force not necessary for the purpose of the war, ie, for the partial or complete submission of the enemy with the least possible expenditure of time, life, and physical resources.'[97]

As described above the UAVs that are deployed to target an individual or a number individuals Al Qaida, Al Shebaab or Ansar Al Sheria leaders is armed with missiles as Hellfire that are anti-tank making their impact anything but humane. What results is not only death of those targeted but certainly in an undignified way. What kind of human remains is buried to have closure?

b) Principle of Distinction

This principle stipulated under Art 48 of AP I requires that belligerents distinguish between military objectives and civilian persons or objects at all times, and attack only military objectives.

Considering that those targeted in Yemen or Somalia are belligerents and thus could be attacked, the means of conducting the attack would in way allow distinction. Unless, another form of projectile is produced that can single out its target like a bullet of the hand held weapons distinction remains impossible.

c) Principle of military necessity

The principle of necessity dictates that military operations should not involve uncalled-for total or wanton destruction. This principle constitutes customary international law is codified as in for example Article 57(3) of AP I.

[96] Y Sandoz et al 'Armed conflicts and parties to armed conflicts under IHL: confronting legal categories to contemporary realities: proceedings of the 10th Bruges Colloquium, 22-23 October 2009' (2010) CICR Collège d'Europe 148, as mentioned in Chengeta p. 43 Cited above at note 88.
[97] Kolb et al p. 44, Cited above at note 85.

This principle more that other, calls for the clarification on the matters surrounding 9/11 and resulting fight against terrorism to be able to establish the belligerent being fought and for what goal in the end to appreciate the military necessity. This being difficult as it is, as stated above the Bush Doctrine made more difficult because the goals have continually expanded, the method heavily relied on the Military with its duration virtually indefinite.[98] Moreover, the strikes, like much that information about drone wars, is swathed in secrecy and confusion.[99] As a result of all this the only ones who can appreciate the military necessity not only in the drone strikes but the whole 'fight against terrorism' are those who strike.

d) Principle of proportionality

Art 51(5)(b) of AP I, states:

'An attack is indiscriminate and hence prohibited if it] may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.'

Accordingly this would mean that all military measures taken by belligerents must be proportionate to the aim they seek to accomplish which in other words means that the military advantage obtained by a particular operation must outweigh the damage caused to civilians and civilian objects by that action or in this case the UAV attacks with a Hellfire missile.[100]

Thus, the military aim of the Hellfire missile targeting be what it may, would obviously not justify certain death of anyone exploded together with target.

3.4 Other question of concern

There are some issues that may not be covered by the above principles or go beyond as cross-cutting. Hence, apart from all the above questions being answered and thus the laws adhered to there remains other concerning questions.

[98] Lee, Cited above at note 93.
[99] *See* Cole p. 5, Cited above at note 27.
[100] Kolb et al p.48 Cited above at note 97.

3.4.1) The duty to assist and protect the wounded and sick

The fate of the Wounded, Sick and Shipwrecked combatants has been the concern of IHL since its birth on the field at Solferino.[101] In particular the subsequent Geneva Conventions I and II contain a series of norms protecting these personnel and requiring belligerents to grant them assistance.[102]

The articulations of Geneva Convention I Art 12 and Geneva Convention II Art 12 respect and protection of the Wounded and Sick while Art 15 GC I and again Art 15 of GC II Art 15 requires the duty to care as well. Articles 34 AP I & Art 130 of GC IV extend this duty to care to the dead as well.

Not hold back on this duty on the bases of different reason Art 10 of AP I, establishes that:

1. All the wounded, sick and shipwrecked, to whichever Party they belong shall be respected and protected.

2. In all circumstances they shall be treated humanely and shall receive, to the fullest extent practicable and with the least possible delay, the medical care and attention required by their condition. There shall be no distinction among them founded on any grounds other than medical ones.

These duties are further set out, in a much more succinct and less detailed fashion, in Article 3 common to the Geneva Conventions and in Article 7 of AP II.

3.4.2) Transmission of information

Once the wounded and sick or the dead as the case may be are collected by the competent medical services of a belligerent, information concerning the combatant must be gathered as soon as possible. GC I Art 16, GC II Art 19 and GC III Art 122 require to as soon as possible, forward this information to the Information Bureau for Prisoners of War, described in Geneva Convention III and operated by the International Committee of the Red Cross (ICRC).

Hence, the question that clearly imposes itself here is whether it is possible to comply with such duties if it is a war that is being fought with UAVs that deliver certain payloads at any given moment, at

[101] The first Geneva conventions of 1864 with its 10 Articles is the result of one of the questions that the battle of Solforino cause as can be gathered from the book by Henry Dunant, A memory of Solforino raised.
[102] *See* Kolb et al p.189, Cited above at note 100.

almost any given Geographic location and against any perceived enemy. Ironically, this is one of the main reasons UAVs are the preferred weapon for this battle.

3.4.3) The Right to life

The right to life is a right protected at international level,[103] regional level[104] and national level.[105] Moreover, like the IHL principles and rules that have attained customary international law status, it is a norm of IHRL that has attained customary international law status.[106] This right is that important or a fundamental human right, because without it, enjoyment of all of the other rights and freedoms established in international human rights conventions would be rendered nugatory; there can be no rights if there is no life.[107] Moreover, the violation of the right to life means the taking away of life that cannot be brought back or after taking away someone's life it can never be given back even if it is finally recognized that taking it was a mistake.[108]

That is why that Art 6(1) ICCPR states that no one shall be 'arbitrarily' deprived of his life. Article 4 declares that no derogation from Article 6 is allowed, not even in an emergency situation. Hence, if not only the so called war itself but the intelligence gathered on a particular, the degree of errors of on the missiles fire and all the other uncalculated influence factors are reason for mistakenly taking a life, how would it be rectified.

3.4.4) Due process

> *'No free man shall be seized or imprisoned, or stripped of his rights or possessions, or outlawed or exiled, or deprived of his standing in any other way, nor will we proceed with force against him, or send others to do so, except by the lawful judgment of his equals or by the law of the land.'*
>
> The Magna Carta (1215)

[103] Article 3 of Universal Declaration of Human's Rights and Art 6 of International Covenant on Civil and Political Rights.
[104] Article 4 of the American Charter on Human Rights , Art 2 of European Charter on Human Rights, Art 4 of African Charter on Human and Peoples' Rights and Art 5 of the Arab Charter on Human Rights
[105] Almost all constitution of every civilized nation protects the right to life, for example Art 15 of the FDRE Constitution.
[106] WP Gormley ''The right to life and the rule of non-derogability: Peremptory norms of jus cogens' R Ramcharan (ed.) The right to life in international law (1985) p.128; and Kretzmer (n 166 above) 185, as mentioned in Changeta p. 28 Cited above at note 84.
[107] Magdalena Sepœlveda, Theo van Banning, Gudrœn D. Gudmundsd—ttir, Christine Chamoun, and Willem J.M. van Genugten, Human Rights Reference Handbook, San Jose University for Peace (3rd ed.2004) P. 209
[108] *See* Y Dinstein 'Terrorism as an international crime' (1987)55 *Israel Yearbook of Human Rights* 63 as mentioned in Changeta p. 53 Cited above at note 96.

In asserting the same right but more tuned to the justice administration, Art 10 of the UDHR states that 'everyone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him'. Nevertheless the take here is that to *proceed with force against him [the other]* or *in the determination of his right* there are conditions that we have to adhere to not only as a matter of procedure but more importantly, it is another's right which is equal to be violated.

Hence, if individuals could be targeted on the suspicion of participating, aiding, support or of perhaps desiring what is perceived as violation of one's right, is there the due process specially when using UAV as a tool to enforce such a will.

CHAPTER FOUR

UNMANNED AERIAL VEHICLES AND ETHIOPIA

4.1) Introduction

There seem to be two push factors, as will be discussed in detail later, behind the need for Unmanned Aerial Vehicles in Ethiopia. However as it is, the technology is so conveniently versatile that regardless of having such unique needs for it; it would be impractical for countries to try to insulate themselves from it. Like other Twenty-First century technological products, like the mobile-phone, computers and social media, it would probably be contagiously invading. With such a rush also there may come irreversible challenges. Hence, it would rather be wiser to adopt the technology with the correlated implications as well. For, a country like Ethiopia would not have the sphere of influence or the resistance that Western countries like the US has if such criticism as faced by the US for its UAV use in the fight against terrorism is directed against it.

On the other hand, it is not only a matter of regulating the use of UAVs but equally important is the normative content of the regulatory system itself. For example according to the Integration Roadmap[109] of the three Unmanned Systems across the US Department of Defense (DoD) the plan takes a 25 year period. This is despite UAVs flying first in 1994 and taking lethal operational in 2001.[110] On the non-military aspect of UAV use, the US Federal Aviation Agency has been giving UAS operation permit between 2003 and 2012.[111] Then from 2012 until 2015 it completed the Federal Aviation Administration Modernization and Reform Act ("FMRA") applicable to public UASs, Civilian UASs based on existing classification of aircrafts and that which is applicable to both.[112] Hence the process took roughly 13 years to complete. Great Britain is considering a range of regulatory factors as well like violation of privacy, sound pollution caused by UAVs, drug trafficking using UAV as a delivery system, and Terrorism as well. For a country like Ethiopia who is also engaged in producing UAVs locally, the comprehensiveness of the regulatory becomes exceedingly important.

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[109] *See* US Department of Defense, Cited above at note 36.
[110] *See* Chapter One, of this paper.
[111] Wells C. Bennett, *Unmanned at Any Speed: Bringing Drones into Our National Airspace*, (2012) p. 3, at (www.brookings.edu/governance.aspx) accessed October 9, 2017.
[112] Federal Aviation Administration Modernization and Reform Act, Pub. L. 122-95 (Feb. 14, 2012)

Hence, this chapter does not only highlight the reported involvement of Ethiopia in the fight against terrorism with the US that is argued to be inconsistent with international law, but also the importance of designing a regulatory system for civilian use inconsideration of the other rights by learning from the countries who have progressed in the process. As a country we are in advantageous position to learn from the experiences out there and ease the journey we travel to get to the desired goal. Like the previous chapters, this chapter is also limited in scope and space, as a result it will not detail all the accounts, procedures and legal frameworks of other countries. It will however, present the available fact of the matter as it pertains to the country and highlight the issue so as to provoke the necessary attention.

4.2 Ethiopian Aviation and UAV

According to Coronel Asfaw Ayelign (Air Force Coronel) in his historical account of the Ethiopian Air force between 1928 and 1991,[113] 'The introduction of an airplane to Ethiopia in 1921 does not mark the begging of aviation in Ethiopia.[114] This is because the French national, Muse Avial Bayer who brought two disassembled Bregi-14 planes by rail up to Addis Abeba, the capital, thought that no one is concerned.[115] Moreover, to support his argument the author defines aviation in his book as 'Aviation is the effort of flying man-made things but includes aircrafts, people engaged in the activity, Intuitions and Structures and aviation safety organizations'.[116] Considering this definition, today the country has:

- The Ethiopia Civil Aviation Authority re-established in accordance to Proclamation 616/2008 with a mission of enabling the public get access to reliable Air transport service by ensuring Aviation safety and security through effective regulatory function, environmental protection, provision of Air navigation services, by strengthening global cooperation and partnership;[117]
- The Ethiopian Air Force established as part of the Defense Force of the Federal Democratic Republic of Ethiopia under Art 4 of Proc.809/2013 to among other defend effectively the country and the constitutional order from outside invaders, terrorist and *internal anti-peace forces; and ensure peace of the country and the continuation of the fast economic* development

[113] Asfaw Ayelign, History of the Ethiopian Air Force between 1929 and 1991(2015) p. 2 (Translated).
[114] Id P. 5 Translation of the texts used is made by the writer, thus not official.
[115] Ibid
[116] Id p. 1
[117] FDRE Civil Aviation Authority website www.ecaa.gov.et/ last visited on February 10, 2017.

and building of democratic system.[118] In terms of its capacity is reported about the Air Force as: *"By 1991, some 4,500 officers and airmen operated approximately 150 combat aircraft, most of them Soviet-manufactured fighter-bombers. A small number of the aircraft were transports and armed helicopters. The air force's tactical organization included seven fighter-ground attack squadrons, one transport squadron, and one training squadron. Approximately seventy-nine helicopters performed reconnaissance, transport, and ground support missions."* [119] Moreover, the detailed of account of its equipment and personnel does not show any UAV ownership or use. [120]

- The Ethiopian Airlines founded on December 21, 1945 and reestablished as an enterprise in accordance to Proc, 25/1992 with a mission of among others providing safe and reliable passenger and cargo air transport, Aviation Training, Flight Catering, and Ground Services with quality.
- Dejen Aviation Engineering Industry, established in the mid-1980s as an Aircraft overhauling center and now as part of FDRE Metals and Engineering Corporation (which previously were under the command of the Ministry of Defense) in accordance to Regulation 183/2010, with a mission of leading the industrial development of Ethiopia in the Aviation sector through overhauling modification, upgrading and manufacturing aircraft machines and parts.[121] It endeavors to realize its mission among others via its eight plant facilities such as: Fixed Wing Production Factory, Rotary Wing Production Factory, Aeromechanical Factory, Avionics System Integration Factory, Power Plant Factory, Body and Frame Factory, UAV production Factory and Test Center Factory. [122]

Hence, it is evident that the country currently does have an Aviation system in place. Moreover, with regards to UAVs, the aspiration is not only to import them for use, it is rather build them locally as it would contribute to the industrial development of the country. However, in the mean time there are questions to use rented ones from foreign companies. According to the Airworthiness Department of the Civil Aviation Authority, there are at least one request per-month either to import purchased UAVs

[118] Article 5(1) of Council of Ministers Regulation No. 385/2016
[119] Global Security website: Ethiopian Air Force, at (http://www.globalsecurity.org/) last visited February 24, 2017.
[120] Global Security website: Ethiopian Air Force Equipment, http://www.globalsecurity.org/military/world/ethiopia/air-force-equipment.htm v last visited on February 24, 2017.
[121] Mission statement of Metal and Engendering Corporation, at (http://www.metec.gov.et/index.php/en/about-metec/background) accessed on March 06, 2017.
[122] Ibid

or rented ones for different uses. [123] For example Shebelle Consultant PLC (**ሸበሌ ኮንሰልታንት ሃላፊነቱ የ.ተ.ኩ**) had made a request for permit to supervise Awash-Kombolacha-HaraGebeya (**አዋሽ-ኮምቦልቻ-ሃራ ገቤያ ባቡር መንገድ**) rail road construction, China State Construction on 27-01-2016 for the construction of the new Commercial Bank of Ethiopia, Head Office; TECHSHELL Industry Plc on 29-01-2016 to mound a video camera to record weddings and making movies.[124] On the other hand, GeoMarks System PLC, a company is engaged in Satellite image processing and Innovative Technology in general had repeatedly asked to purchase UAVs for it work and was not able to get a definite answer.[125] However, based on such requests the Civil Aviation wrote a letter 04-02-2016 ref. CAA-0012/16 to the Information Network Security Agency (INSA) so as to together to come up with a comprehensive regulation.[126] This was done because such requests were being addressed on a case by case base with consultation with, INSA and the Central Command (**ዘመቻ መምሪያ**).[127] INSA responded by saying "we are in the process of coming up with a regulatory system…" "**ህጋዊ ማዕቀፍ በማዘጋጀት ላይ ስለምንገኝ** …" in the letter **ከመጸኤ/ጀጠ**/94/08 dated 11-02-08 E.C.

Then recently it was reported that C/o Wesenyeleh Hunegnaw, Director General of the Civil Aviation announced in an interview he gave to The Reporter News paper that a regulation on Drone will be recently issued by the Authority.[128] Yet more recently, just by chance the crew of the Ethiopian Television Corporation was recording a program at the gate of Addis Ababa University using a small drone (GJI Phantom 2 Model) and disclosed that they have been using it since one year now.[129]

All this, then establishes that there is a practical need for UAVs not only in the military function but also in the purely civilian aspect as part of the development and the industrialization process where mega-projects need UAVs as part of the supervision process, but also highlighting the need the regulatory mechanism as well.

[123] Interview with Ato Haish Beyene on 25-07-2016 representative of the Head of Department and data obtained from on 29-07-2016 from another colleague.
[124] Ibid
[125] Interview with Ato Tsegaye Habtu, owner and Manager of GeoMarks System PLC on 09-05-2016 and 12-05-206.
[126] Interview Cited above at note 117.
[127] Interview Cited above at note 119.
[128] The Reporter (Addis Ababa7 November 2015), Kaleyesus Bekele, Ethiopia: Gov't to Draft Drone Law, at (http://allafrica.com/stories/201511160760.html) accessed on October 15, 2016
[129] Detailed in Annex 3.

4.3) UAV and Ethiopia's fight against Terrorism

In 2004, the African Human Security Initiative made a survey of the threat of terrorism in eight African states and classified them into three categories namely: high threat assessment, intermediate threat assessment and low threat assessment.[130] It categorizes Ethiopia along with Nigeria and South Africa with an intermediate threat assessment to terrorism.[131] One of the terrorism threats to Ethiopia is as a result of the volatility of its neighboring Somalia, which has existed in a state of anarchy since the overthrow of its military dictator Mohammed Siad Barre in 1991.[132] Partly because of the void left by the disappearance of the police and the judiciary system neighborhood Shari'a Court sprung up in the late 90s and then the transformed into the Islamic Courts Union (ICU) with its military wing the Al Shabaab.[133] The formation of the ICU was a reaction to the establishment of the Transitional Federal Government of Somalia by diplomatic maneuvering of regional players like Ethiopia.[134] When it controlled the capital Mogadishu at the peak of its influence in 2006, radical voices begun to refer to a "Jihad" against the Ethiopian "Crusaders".[135]

Even though it is denied by Washington and Addis Ababa the rise of such Islamists in the chaos of Somalia exposed close intelligence and military cooperation between Ethiopia and America, fuelled by mutual concern.[136] It was three weeks after General John Abizaid, the commander of US forces from the Middle East through Afghanistan, arrived in Addis Ababa to meet the Ethiopian prime minister, Meles Zenawi that Ethiopian forces crossed into Somalia in a war on its Islamist rulers[137] on December 24, 2006[138]. On January 23, 2007 there were reports that the US had a base in Eastern Ethiopia that

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[130] Charles Goredema and Anneli Botha, African Commitments to Combating Organized Crime and Terrorism: A Review of Eight NEPAD Countries, African Human Security Initiative, 2004, pp. 64-69. As mentioned in Hiruy Wubie, 'The Impact of Terrorism and Counterterrorism on Human Rights Protection: The United Nations' Response and Ethiopian Experience', LLM Thesis,(2010) Law School Library AAU (2010) p. 74.

[131] Ibid

[132] *See* Rob Wise, *Al Shabaab*, (Case Study 2, Jull 2011,Center For Strategic & International Analysis, Homeland Security & Counterterrorism Program), at (www.CSIS.Org/) accessed on March 09, 2017.

[133] Ibid

[134] Gashaw Teshome Mengesha, The Rise and Fall of Somalia's Islamic Courts Union (ICU) And Its Implications For Peace, Research Report for Master's Degree(2008) p. 30.

[135] Wise Cited above at note 132.

[136] *See* The Guardian, (2007) at (https://www.theguardian.com/world/2007/jan/13/alqaida.usa 13 January 2007) accessed on March 14, 2017.

[137] Ibid

[138] Wise Cited above at note 135.

planes were operating from. [139] Then as Ethiopia withdrew its forces on January 2009 and apparently Al Shabaab changing its tactics to suicide, [140] there were reports not only airbases or so but UAV/Drone operations from Ethiopia.

On one hand it was reported that 'The Ethiopian army has ordered unmanned aerial vehicles from Israeli manufacturer BlueBird Aero Systems, and has also contracted the company to establish maintenance facilities for the aircraft'.[141] Then that, 'in April 2011, BlueBird was awarded a contract to supply SpyLite and Boomerang man-portable fuel-cell-powered UAVs to the Ethiopian Army. It is also reported that BlueBird will help in establishing maintenance facilities for the UAVs in Addis Ababa'.[142]

On the other hand October 27 2011 it was reported citing, New York Times, allAfrica, Bloomberg, Somalia Report, Reuters, Independent, Associated Press, al Jazeera that:[143]

"The US confirmed a new drone base at Arba Minch in Ethiopia was now operational and that flights had already started from the site. The Washington Post reported armed Reapers were flying from the site, although US officials told the BBC and Al Jazeera the base was being used for surveillance flights only. The US government was reported to have spent millions of dollars adding drone facilities to Arba Minch's small civilian airport. The Ethiopian foreign ministry denied the facility was a military base: spokesperson Tesfaye Yilma told the Washington Post, 'We don't entertain foreign military bases in Ethiopia'. Captain John Kirby of the US Department of Defence told Al Jazeera: 'There are no US military bases in Ethiopia. It's an Ethiopian airfield."

This collaboration with the US on its drone operations in Somalia must have been fruitful because it was on 06 January 2016 that the termination was reported by The Defense Web, citing the Routers.[144]

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[139] The Bureau Investigates, 'US and UK covert operations in Somalia 2001-2017', at (https://www.thebureauinvestigates.com/drone-war/data/somalia-reported-us-covert-actions-2001-2017) accessed on January 04, 2017.

[140] Wise Cited above at note 138.

[141] Defense Web, 'Ethiopia buys unmanned aerial vehicles from BlueBird', Monday, 23 May 2011, at (http://www.defenceweb.co.za) accessed on July 28, 2016.

[142] BlueBird, *Africa; '*Undisclosed client orders BlueBird Spylite UAV', at (http://www.bluebird-uav.com/hello-world-) accessed July 20, 2016.

[143] The Bureau Investigation Cited above at note 139.

[144] Defense Web, cited above at note 141.

Hence, the ground operations in Somalia in 2006, then the reported purchase of UAVs in 2011 and reportedly having availed a civilian airport for US UAV operations in Somali may or may not add up to justify a legitimate preemptive self-defense for Ethiopia. However, the mere association with the US Drone/UAV strikes, particularly in Yemen and Somali, while under such scrutiny is not something that unlike the US, Ethiopia can afford.

4.4) Analysis of the Ethiopian context and Legal Consequences

In further efforts to reconfirm that indeed Ethiopia has collaborated with the US in the fight against terrorism using UAVs in Somalia, an interview was made with Ato Shambel Tilahun, Media Relations Team Leader of the Government Communications Agency on 19 June 2017. Accordingly, Ato Shambel confirmed that on one hand the news source Routers is a verified source that has a correspondent with whom the Agency has regular contact. He also, visited the website of Retours to check if the news bulletin was still there. On the other hand he also availed the telephone number of Hon. Ato Getachew Reda, the then Head of the agency who disclosed the termination of the cooperation on 06 January 2016, to get further details. But with regards to the news itself he confirmed that it was true. Efforts to contact speak to Hon. Ato Getachew in detail were not successful because he said he is on a training and will be free during the weekend but then when called again during the weekend he did not respond.

Hence, considering the use of UAVs as irrefutable and the lack of operational details as classified information which would only have added to the contravenouse nature of these vehicles the analysis of the legal consequence to Ethiopia would inter alia immanent from the payload. As stated above, UAVs are armed with missile like Hellfire and Griffin. These weapons are manufactured for armored vehicles like tanks but in such instances as the fight against terrorism they are use for targeted killing such but in no case against tanks because terrorists in Somalia are not reported to own such armored vehicles as Tanks. As a result these missiles are used against individual human beings. To particularly target individual human beings the weapon conventionally used is a bullet. For such single individuals using something more than a bullet would obviously have more side effects that are to be scrutinized to the rules and principles of International Humanitarian Law. Only a few of such principles and rules violated by using missile against single individuals are:

a) The principle of humanity stipulated under common Article 3 to Geneva Conventions I-IV; in Articles 12/12/13/27 of Geneva Conventions I-IV; and Article 4 of Additional Protocol II. These missiles being fired against single individuals could not be justified human because they are made for armored vehicle. The balance that IHL aims to maintain is between military necessity and humanity being that in the military necessity is to establish upper hand over the supposed enemy not causing human suffering. Thus, the missiles obviously cause more damage than establishing upper hand.

b) The principle of distinction stipulated under Art 48 of AP I requires that belligerents distinguish between military objectives and civilian persons or objects at all times, and attack only military objectives. But these projectiles cannot single out a targeted individual like bullets do. They have a wide range of impact area with varying diameters. As a result distinction between civilians and those deemed "legitimate target" is obviously impossible. Contrarily, as those targeted are fired upon at unexpected times it is more likely that they are with their family members or loved ones would also be incidental victims.

c) Principle of military necessity that dictates that military operations should not involve uncalled-for total or wanton destruction. This principle constitutes customary international law codified as in for example Article 57(3) of AP I. As explained above the distraction caused UAVs and there payload is uncalled for, on the other hand the principle calls for the clarification on the matters surrounding such actions as fight against terrorism to be able to establish the belligerent being fought and for what goal in the end to appreciate the military necessity. This being made difficult because the goals may continually change or expanded, the method made heavily reliant on the Military and the durations indefinite. Moreover, the strikes, like much of information surrounding the operations are swathed in secrecy and confusion making it difficult for such academic scrutiny.

d) The principle of proportionality stipulated under Art 51(5)(b) of AP I dictates that all military measures taken by belligerents must be proportionate to the aim they seek to accomplish which in other words means that the military advantage obtained by a particular operation must outweigh the damage caused to civilians and civilian objects by that action or in this case the UAV attacks with a Hellfire missile. The situation is as repeatedly stated above.

Therefore, regardless of the lack of operational details, with matters as it stands the legal consequences for Ethiopia is at minimum violation of these IHL rules and principles.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

Unmanned Aerial Vehicles or Drones, the technological products that can be put to a number of uses, are very deadly when they come in the form of the Predator and the Reaper Drones. They proved so, in none other than in the 'Global War on Terror' lead by the US and involving countries like Ethiopia in some form depending on geo-political needs. The right to self-defense is the justification and trajectory for ending up with UAV lead targeted killings in Yemen as the first lethal operation recoded, Somalia, Pakistan and of course in Afghanistan and Iraq aside from operating with 'Boots on the Ground' there. The right to Self-defense as established in customary international law and developed by case law over a century, is since the latter half of the century, recognized as a legitimate exception to an otherwise no resort to the use of force in international relations consensus of states. Hence, is the current state of affairs as stated above coherent with the existing rules of the resort to force and if so also coherent with those regulating the use of force itself? Moreover, regardless of such rules as a rule, aren't non-derrogable rights being violated when UAVs target to kill a stranger hundreds of miles and kilometers away?

To save succeeding generations from the scourge of war and to reaffirm faith in fundamental human rights, among other things, was the resort to force prohibited. On the other hand being inherent to the states, the right to self-defense remained to be, but also recognizing that all states are equal in sovereignty as individuals are in dignity. However, what justifies the Bush doctrine that left the world with a fight against terrorism whose duration is virtually indefinite, gradually expanding goals, and whose method has relied heavily on UAV targeted killings while such measures as diplomacy and intelligence remain. The paradox is that, this is while the right to Self-defense is well recognized to be instant, overwhelming, leaving no choice of means, and no moment for deliberation to be necessary, because to be proportionate as well it takes being reasonable or not excessive together.

Having surpassed the justification to use force, UAVs are to be scrutinized against the rules that regulate it as a means and method for the use of force. This is basically because having the conviction to use force does not simply entail any choice of means or method can be employed. As a result, as a means or weapon the primary duty not only as emanating from IHL instruments but more importantly its customary international rules, is the determination of adherence of a new weapon to the set duties.

As testimony of the duty's being customary international law, the US has been practicing it since some four years before it was articulated in AP I as Art 36. This duty also refers to Ethiopia who has ratified AP I decades ago and is engaged in producing not only UAVs but also other weapons as part of its transformation into a middle income country. Being a producer however, especially for Ethiopia entails another question as well, regulating also the civilian use of UAVs as the request has already materialized and projected itself to the FDRE Civil Aviation Authority.

With the conviction that IHL principles have attained customary international law status, the debate over classifying the conflict is put to rest and reference is made to the rules directly. Accordingly, we find among other, that weapons and means which would render the death of adverse personnel inevitable; weapons and means which would uselessly aggravate the sufferings of adverse personnel; and weapons and means which have indiscriminate effects, hitting military and civilian objectives alike are prohibited. The said UAVs are armed with hellfire missile that are anti-tank by make and were found to be 'not working well against softer targets'. Moreover, if these missiles can 'slice and dice anyone within a twenty-foot radius' how can their use against individuals be justified as being within the bounds of the law because it is certainly not this law. By the same token, it would not be possible to justify humanity, distinction, military necessity and proportionality in terms of a method of warfare. The situation is that, the belligerent if such reference can be made; on the side of the UAV has the ultimate power. The attack on a human being would simply be devastating, the missile's impact is certainly too wide for a single individual thus making distinction impossible. Makin such an impact against a human being is certainly not humane. Those targeted are caught by surprise without amounting any attack, thus there cannot be a justification of military necessity. Finally, proportionality is a notion we simply cannot begin to talk about under such circumstances.

Lowering the standard even further, isn't a belligerent obliged to assist the wounded and sick at battle and collect and transmit information on the dead a duty stipulated in IHL instruments. How can one adhere to such duties when the UAV itself at times may not even be seen let alone the operating soldiers to come for help? Isn't the right to life a right which is a fundamental human right that has attained customary international law status to be reckoned with by a UAV that is prone to mistakes if not for the accuracy in targeting, for the intelligence, or other factors?

Therefore, states are not only novice to UAVs as a twenty-first century technology but also to their use in accordance to the cotemporary International Law. As a result it requires:

- For the sake of civilization and if technologically possible, to use UAVs under the context of the existing International Law.
- Where such is not possible the continuation of censorship and discouragement of such use of UAVs as that of the US and those states encouraged by it.
- In the mean time to address international terrorism with the recognition that such alternatives as diplomacy and intelligence can work as in Europe given the exposure.

- In adopting a convention internationally and promulgating laws nationally to regulate the use of UAVs, the law makers should consider that the right to privacy is not violated by the use of UAV which are of different size and shape to even enter our homes like insects.
- As UAVs are operated by small motors that make noise, so sound pollution is also another concern for countries like Ethiopia which tried to regulate sound pollution but the issue become religious when churches and mosques were involved.
- The use of UAVs has also a criminal aspect in that as they can easily cross borders and can carry certain weight care should be taken for them not to be used to smuggle illegal weapons or drugs by anyone.
- When it comes to the Institutional framework, a certain Institution both in the international arena or in national air space should be give the mandate to regulate the use like: certification of Pilots/operate, locations that are allowed for operating UAVs, safety measure and so on.

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