Legal perspectives on the cross- border operations of unmanned aircraft systems

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3 PILOTLESS AIRCRAFT

3.1 SCOPE OF THIS CHAPTER

Under the Chicago Convention 1944, the central provision that governs the operations of UAS is Article 8 on pilotless aircraft. How does this provision, which in its textual meaning refers to 'aircraft without a pilot', apply to UA and its subcategories, such as RPA? The answer is crucial because the access of UA to foreign airspace will stand on the legal certainty that UA is indeed an aircraft flown without a pilot, even if remotely operated by a pilot that is not on board, which may sound like a contradiction or perhaps nonsense.

In this process of analysis, the author will make use of the principles and rules of international law on treaty interpretation, laid down in section F of the introduction of this research, since the legal study aims to determine the scope and application of all the elements that make up Article 8 on pilotless aircraft of the Chicago Convention 1944. Instead, Chapter Four will focus on the legal aspects of the access of UA to foreign airspace.

3.2 ANALYSIS OF ARTICLE 8 ON PILOTLESS AIRCRAFT OF THE CHICAGO CONVENTION 1944

3.2.1 UNMANNED AIRCRAFT UNDER ARTICLE 8

Article 8 permits pilotless flights only with special authorisation from the overflown State.

> Article 8: Pilotless aircraft
>
> "No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorisation by that State and in accordance with the terms of such authorisation. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft."

ICAO states that all UA, whether remotely piloted, fully autonomous or a combination of both, are subject to Article 8 on 'pilotless aircraft' of the Chicago Convention 1944.[1]

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1 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015.1-1.

Following the mandate of Article 8 and the interpretation that ICAO gave to such provisions, ICAO began actions to harmonise its norms in the Annexes to the Chicago Convention 1944 to address aspects of airworthiness, unmanned operations, licensing and medical qualification of remote pilots, requirements for detecting and avoiding systems, frequency spectrum (including its protection from unintentional or unlawful interference) and separation standards from other aircraft. In that process, ICAO amended and adopted new SARPs,[2] with supporting PANS[3] and guidance material, further discussed in this research[4] and aimed at facilitating the routine operations of UAs throughout the world in a safe, harmonised and seamless manner comparable to that of manned operations.[5] The author will address the legal force of the Annexes to the Chicago Convention 1944 in section 5.2.2 of Chapter Five.

To help the ICAO Council fulfil the proposed aims, the Air Navigation Commission (ANC)[6] established the UAS Study Group (UASSG) at the Second Meeting of its 175th Session on 19 April 2007. The first tangible product of this study group was the UAS Circular 328, published in March 2011. This

2 ICAO's SARPs are grouped into Annexes of the Chicago Convention 1944. Prof. Michael Milde, in his book *International Air Law and ICAO,* Second Edition, states: 'The Convention does not provide a definition of the 'standards and recommended practices'. ICAO formulated a definition in several subsequent resolutions (Resolution A36-13, Appendix A) of the ICAO Assemblies, the current text being: a) *Standard* — any specification for physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38 of the Convention; and b) *Recommended Practice* — any specification for physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation and to which contracting States will endeavour to conform in accordance with the Convention."

3 Procedures for Air Navigation Services (PANS) are documents produced by ICAO with a lower legal status than the SARPs. PANS are designed for 'world-wide application' and comprise operating practices as well as material considered too detailed for SARPs. PANS often amplify the basic principles in the corresponding SARPs contained in Annexes to assist in their application.

4 See Section 5.3 on Emergence of ICAO regulations

5 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015. *(v)*

6 See *Air Navigation Commission,* https://www.icao.int/about-icao/AirNavigationCommission/Pages/default.aspx. Accessed March 26, 2018. The Air Navigation Commission (ANC) considers and recommends Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) for adoption or approval by the ICAO Council. The Commission is composed of nineteen members who have '*suitable qualifications and experience in the science and practice of aeronautics*', as outlined in the Chicago Convention 1944. Although ANC Commissioners are nominated by specific ICAO contracting States, and appointed by the Council, they do not represent the interest of any particular State or Region. Rather, they act independently and utilise their expertise in the interest of the entire international civil aviation community.

document addressed the legal and regulatory issues that required ICAO's and the contracting States' attention to comply with the Chicago Convention 1944 provisions and its Annexes.[7] ICAO adopted the first SARPs related to UA on March 2012, in Annex 2-Rules of the Air and Annex 7-Aircraft Nationality and Registration Marks.[8]

On May 6, 2014, during the Second Meeting of its 196th Session, the ANC agreed to establish the Remotely Piloted Aircraft System Panel (RPASP), which committed to progressing the work begun by the UASSG. Over three years, the RPASP created a guidance manual with input from many groups and experts on UA. In April 2015, the Secretary-General of ICAO[9] approved the publication of the Manual on RPAS (Doc 10019 AN/507), which provides direction on technical and operational issues consistent with already adopted standards applicable to integrating UAS into the airspace and at aerodromes.

Annex 7, on Aircraft Nationality and Registration Marks to the Chicago Convention 1944, provides that an aircraft intended to be operated with no pilot on board shall be further classified as unmanned.[10] It also classifies UA into three categories: RPA, unmanned free balloons and autonomous aircraft. An RPAS is an RPA, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design.[11] RPAS also seems to be the preferred terminology utilised by other international aviation-related agencies, such as Eurocontrol,[12]

7 ICAO has produced nineteen Annexes to the Chicago Convention1944. SARPs are the essential part of each Annex, which have been arranged in numbered chapters, subchapters and paragraphs and subparagraphs.

8 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015. 1-3

9 The Secretary General of ICAO is head of the Secretariat and chief executive officer of the Organization responsible for general direction of the work of the Secretariat. The Secretary General provides leadership to a specialized international staff working in the field of international civil aviation. The Secretary General serves as the Secretary of the Council of ICAO and is responsible to the Council as a whole and, following established policies, carries out the duties assigned to him by the Council, and makes periodic reports to the Council covering the progress of the Secretariat activities. The Secretariat consists of five main divisions: the Air Navigation Bureau, the Air Transport Bureau, the Technical Co-operation Bureau, the Legal Affairs and External Relations Bureau, and the Bureau of Administration and Services. The Secretary General is also directly responsible for the management and effective work performance of the activities assigned to the Office of the Secretary General relating to Finance, Evaluation and Internal Audit, Communications, and seven Regional Offices.

10 *Annex 7 – Aircraft Nationality and Registration Marks*- to the Convention of International Civil Aviation, Sixth Edition, July 2012), 2.

11 *Annex 7 – Aircraft Nationality and Registration Marks*- to the Convention of International Civil Aviation, Sixth Edition, July 2012, 2.

12 *Remotely Piloted Aircraft Systems (RPAS) ATM Concept of Operations (CONOPS).* Eurocontrol. December 21, 2017. Accessed November 04, 2018. https://www.eurocontrol.int/publications/remotely-piloted-aircraft-systems-rpas-atm-concept-operations-conops

the European Aviation Safety Agency (EASA),[13] the Civil Aviation Safety Authority of Australia (CASA),[14] and the Civil Aviation Authority of New Zealand[15] because they use the same terminology.

The author uses the acronyms UA and UAS across this thesis to refer to all types of UA and its components covered by Annex 7 to the Chicago Convention 1944. However, when necessary, the author will use the acronyms RPA or RPAS to point out the specific nature of a subset of UA or UAS.

3.2.2 CURRENT SITUATION OF THE CROSS-BORDER FLIGHT OPERATIONS OF UNMANNED AIRCRAFT SYSTEMS

Although the content of Article 8 on pilotless aircraft is relatively old,[16] how common are the operations of UAS in foreign airspaces nowadays? On August 29, 2016, through the note, LE 4/63 – 16/77, ICAO's Secretariat consulted the member States, *inter alia*, if during the past two years they had received requests for a special authorisation for the operation of civil UA. ICAO's Secretariat conducted this survey within the framework of a mandate from the Legal Committee of the international organisation during the 36th session, precisely to address aspects of RPAS other than those pertaining to liability, which potentially needed attention.[17]

Responses to ICAO's survey on this matter showed that the number of States currently impacted by the international air navigation of UA is still limited, since only twenty-six out sixty-one respondents affirmed having received a request from a foreign UAS operator for 'special authorisation' under Article 8 of the Chicago Convention 1944 to operate a civil UA within its territory in the past two years. Further, for those States engaged in international UAS operations during this period, the current legal landscape does not appear to be an impediment because only eighty percent of these requests were approved and only three requests were denied for reasons other than State sovereignty, operational safety, national or aviation security

13 *Introduction of a Regulatory Framework for the Operation of Unmanned Aircraft.* December 18, 2015. Accessed November 05, 2018. https://www.easa.europa.eu/sites/default/files/dfu/Introduction%20of%20a%20regulatory%20framework%20for%20the%20operation%20of%20unmanned%20aircraft.pdf

14 *Regulating RPAs for Safer Operations.* Civil Aviation Safety Authority. March 22, 2016. Accessed November 04, 2018. https://www.casa.gov.au/about-us/standard-page/regulating-rpas-safer-operations.

15 *Part 101: CAA Consolidation.* March 10, 2017. Accessed November 5, 2018. https://www.caa.govt.nz/assets/legacy/rules/Rule_Consolidations/Part_101_Consolidation.pdf

16 The Protocol of June 15, 1929, amending the Paris Convention 1919, incorporated the first legal provision regarding 'pilotless aircraft', which was later adopted by the Chicago Convention 1944.

17 *Remotely Piloted Aircraft Systems Legal Survey*. Legal Committee 37th Session. Accessed October 22, 2018. https://www.icao.int/Meetings/LC37/Documents LC37%20WP%202-1%20EN%20Remotely%20Piloted%20Aircraft.pdf

or domestic laws or regulations. The result of the survey is relevant because it is not only a source of evidence of the international civil operations of UAS and current member States practice on this matter, but also shows increasing engagement of civil UAS operations into foreign airspaces.[18]

3.2.3 ANALYSIS OF ARTICLE 8 OF THE CHICAGO CONVENTION 1944

3.2.3.1 THE CENTRAL COMPONENTS OF ARTICLE 8 OF THE CHICAGO CONVENTION 1944

Under Article 1 of the Chicago Convention 1944, "every State has complete and exclusive sovereignty over the airspace above its territory."[19] Therefore, its drafters had to provide the regulatory means to allow or deny foreign aircraft to fly into the airspace of another State. As previously discussed in Chapter Two, the violation of the airspace sovereignty principle entails the infringement of the Chicago Convention 1944 and, consequently, customary international law.[20]

With regards to the use of UA to facilitate international air navigation, Article 8 of the Chicago Convention 1944 furnishes the legal framework to give States the discretion to authorise flight into their airspace. Under this provision, the contracting States to the Chicago Convention 1944 may permit, subject to prior 'special authorisation', the flight of an "aircraft capable of being flown without a pilot" within its territory. Accordingly, UA may not enter the sovereign airspace of another State without that State's prior consent.

Even though Article 15 of the Paris Convention 1919, as amended by Protocol 1929, provides the regulatory roots for the flight of pilotless aircraft, the Indian delegation to the Chicago Conference 1944 proposed the current language of Article 8 through Doc. 348, which is almost identical to the language of Article 15, as noted above. The drafting committee of Subcommittee 2 incorporated the wording of Article 8 in its second report (Doc. 414) and later ,approved it with one minor amendment at the final meeting of the Subcommittee.[21]

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18 *Remotely Piloted Aircraft Systems Legal Survey.* Legal Committee 37th Session. Accessed October 22, 2018. https://www.icao.int/Meetings/LC37/Documents LC37%20WP%20 2-1%20EN%20Remotely%20Piloted%20Aircraft.pdf

19 Article 1 on Sovereignty of the Chicago Convention 1944.

20 See section 2.2.3 of Chapter Two.

21 Appendix 2, *Commentary on the Development of the Individual Articles of the Convention on International Civil Aviation*, prepared by Mrs. Virginia C. Little of the International Conference Secretariat and issued by the Provisional International Civil Aviation Organization as document 2996, IC/8 Mar 25, 1947), 1382.

As noted in the factual findings described in Chapter One,[22] UA existed during WWI and WWII; however, no explicit definition of pilotless aircraft was introduced in either the Chicago Convention 1944 or its Annexes until the Eleventh Air Navigation Conference[23] endorsed the global ATM operational concept with the following statement:

> "an unmanned aerial vehicle is a pilotless aircraft, in the sense of Article 8 of the Convention on International Civil Aviation, which is flown without a pilot in command on board and is either remotely and fully controlled from another place (ground, another aircraft, space) or programmed and fully autonomous."[24]

The 35th Session approved this understanding of the definition of UAVs at the ICAO Assembly in 2004.[25]

Later, the Sixth Amendment to Annex 7 on Aircraft Nationality and Registration Marks to the Chicago Convention 1944 incorporated the term RPA, defined as:

> **Remotely piloted aircraft (RPA):** "an unmanned aircraft, which is piloted from a remote pilot station."[26]

Article 8 of the Chicago Convention 1944 incorporates three central components that deserve analysis, not only for the correct understanding and application of the provision as a whole but also the legal implications of the operation of UAS in foreign airspaces, namely:

1. Flown without a pilot;
2. Special authorisation by the State; and,
3. To obviate danger to civil aircraft.

In these three components, a UA is a pilotless aircraft, requires prior permission to enter the airspace of another State and shall keep due regard at all times to prevent jeopardy to civil aircraft.

Although UA have existed since WWI and were mainly used in military operations, nowadays there are increasing civil UAS operations in international airspaces. Nevertheless, UA integration into everyday operations, together with manned civil aircraft, depends mainly on the development of

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22 See section 1.1, Historical Overview.
23 Eleventh Air Navigation Conference (ANConf/11), Montréal, 22 September to 3 October 2003.
24 ICAO. *Global Air Traffic Management Operational Concep*t – Doc 9854 AN/458, 2005), 82.
25 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015), 1-2.
26 *Annex 7 – Aircraft Nationality and Registration Marks*- to the Convention of International Civil Aviation, Sixth Edition, July 2012), 1.

a complete set of SARPs and PANS specifically addressing the nature and risk associated with UA flight.

In the next subsection, the author will analyse these components using the theoretical framework explained in the introductory section of this research.[27]

3.2.3.2 THE EXPRESSION 'FLOWN WITHOUT A PILOT'

3.2.3.2.1 MEANING OF PILOTLESS AIRCRAFT

ICAO upheld that an aircraft "flown without a pilot" refers to the situation where there is no pilot 'on board' the aircraft but controlled by a pilot from a remote station.[28] Is ICAO's interpretation consistent with international law, particularly with the ordinary meaning of the term 'pilotless aircraft'? We must determine under international law whether the pilotless aircraft of Article 8 refers to aircraft "flown without a pilot on board", but remotely or, in an alternative interpretation, the aircraft has no intervention by a pilot at all and thus must resort to the rules of interpretation of the Vienna Convention of the Law of Treaties, henceforth simply referred as VCLT.

What is the meaning of the phrase 'flown without a pilot'? Are RPA machines operated without a pilot, as per those established by Article 8? Article 8 may raise at least two ways to understand the meaning and ambit of pilotless aircraft, namely:

1. The aircraft is flown with no pilot intervention at all, even from a remote station; and,
2. There is no pilot on board the aircraft but is remotely controlled.[29]

The author will address these questions by using internationally recognised principles and rules of interpretation laid down in section F of the introduction of this research.[30] Furthermore, to answer the research question of whether the Chicago Convention 1944 and its SARPs apply to UA, in the next two sections the author will analyse whether RPA are or are not pilotless aircraft . However, why does he employ the acronym RPA as the basis of the analysis?

As we have seen in section 3.2.1, ICAO has determined that any aircraft intended to be flown without a pilot on board is referred to in the Chi-

27 See section F of the Introduction of this research.

28 This understanding of unmanned aerial vehicles was endorsed by the 35th Session of the ICAO Assembly in 2004 (A35-14).

29 Mikko Huttunen. *'Unmanned, Remotely Piloted, or Something Else? Analysing the Terminological Dogfight'*. Air and Space Law, May 2017). Accessed October 16, 2018. https://www.kluwerlawonline.com/abstract.php?area=Journals&id=AILA2017023.349-68.

30 See Introductory section 'Theoretical Framework'.

cago Convention 1944 as a 'pilotless aircraft'. Even though ICAO calls these aircraft UA rather than pilotless aircraft, under Annex 7 on Aircraft Nationality and Registration Marks to the Chicago Convention 1944,[31] UA include a broad spectrum of aircraft, from meteorological balloons that fly freely to complex aircraft piloted from remote locations by licensed aviation professionals. RPA are a part of the classification of UA, for which ICAO has developed not only guidance material[32] but also has adopted SARPs,[33] since ICAO has noted that this subset of UA can be accommodated and ultimately integrated into the airspace for international flights, together with manned aircraft.[34]

3.2.3.1.2 RPA ARE NOT PILOTLESS AIRCRAFT

With regard to the first element, 'flown without a pilot', the term 'on board', interpreted by ICAO, is not expressly prescribed in Article 8. Pilotless, in the ordinary meaning, means without a pilot.[35] However, ICAO has interpreted and concluded that the intent of the drafters of the Chicago Convention 1944 concerning an 'aircraft flown without a pilot' in Article 8, implies a situation where there is no pilot on board the aircraft but is in a remote station where it controls and operates the flight.[36]

As per ICAO's own definition,[37] an RPA is 'a UA which is piloted from a remote pilot station'. Consequently, it can be easily concluded, by applying the ordinary meaning of pilotless aircraft, that an RPA is not an aircraft capable of being flown without a pilot, as a pilot indeed flies it, but from a remote pilot station. Further, Annex 2 on Rules of Air to the Chicago Convention 1944 defines the term 'remote pilot' as:

> "...A person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time."[38]

31 *Annex 7 – Aircraft Nationality and Registration Marks* – to the Convention of International Civil Aviation, Sixth Edition, July 2012), 2.

32 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015.1-1.

33 *Annex 2 on Rules of Air, Annex 7 on Aircraft Nationality and Registration Marks and Annex 13 on Aircraft Accident and Incident Investigation* already incorporate rules for UA international air navigation. ICAO's Council adopted provisions on the remote pilot licence in *Annex 1 on Personnel Licensing* and are available for voluntary use. They will become applicable in November, 2022.

34 *Remotely Piloted Aircraft System (RPAS) Concept of Operations (CONOPS) for International IFR Operations.* Accessed February 9, 2019. https://www.icao.int/safety/ua/documents/rpas%20conops.pdf

35 Article 8 on Pilotless aircraft of the Chicago Convention 1944.

36 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 1-1.

37 See definition of Remotely Piloted Aircraft in *Annex 7 – Aircraft Nationality and Registration Marks-* to the Convention of International Civil Aviation, Sixth Edition, July 2012), 1.

38 *Annex 2, Rules of the Air* to the Chicago Convention 1944 tenth edition, July 2015, for definition of 'Remote Pilot', 1-8.

Based on the above analysis, Article 8 of the Chicago Convention 1944 would not apply to RPA because it does has a pilot, except for UA that do not allow pilot intervention in the management of the flight, known as 'autonomous aircraft'.[39] In other words, Article 8 could only apply to UA that can fly autonomously without a pilot operating the aircraft, but not to those being operated remotely by pilots. However, the legal challenge remains unaddressed since ICAO has excluded autonomous UA from the scope of work of the Manual on RPAS. The reason is that autonomous UA and their operations, including unmanned free balloons, cannot be managed on a real-time basis during flight.[40] Nevertheless, ICAO is studying the subject and will make proposals for such new rules.

3.2.3.1.3 RPA ARE PILOTLESS AIRCRAFT

The Chicago Convention 1944 does not define the term 'aircraft'. However, its Annex 7 on Aircraft Nationality and Registration Marks and other Annexes do define the term:

> "***Aircraft.*** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface."[41]

As the operation of pilotless aircraft is a developing area of aviation, the background and the process of developing the regulatory framework of UA under ICAO's purview is of useful assistance in the endeavour of integrating UAS into the aviation system. The ICAO Assembly has produced relevant sources for the recognition of UA under air law. In 2014, at the 35th ICAO Assembly, the States agreed that UAVs are pilotless aircraft.[42] In 2012, the amended Annex 7 on *Aircraft Nationality and Registration Marks* officially recognised RPA as a subset of UA. The definition of RPA was also set out. Accordingly, RPA is 'a UA, which is piloted from a remote pilot station'.[43] Therefore, Annex 7 makes it clear that all UA, whether remotely piloted or not, are subject to the provisions of Article 8.

ICAO also published the Manual on RPAS in March 2015. Even though the Manual is not binding for ICAO member States, it guides technical and

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39 See the suggested definition of 'autonomous aircraft' on ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015. *Autonomous aircraft**. An unmanned aircraft that does not allow pilot intervention in the management of the flight. *Note: — The terms contained herein are used in the context of this manual. Terms followed by one asterisk* have no official status within ICAO.*

40 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015,1-8.

41 *Annex 7 – Aircraft Nationality and Registration Marks*- to the Convention of International Civil Aviation, Sixth Edition, July 2012, *xiv*.

42 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 1-2.

43 *Annex 7 – Aircraft Nationality and Registration Marks:* International Standards. 6th ed., Montreal, ICAO, 2012, 1.

operational issues applicable to the integration of RPA in non-segregated airspace and is coherent with the definition of RPAS in the SARPs mentioned above. The aim of the Manual on RPAS is to "assist in the development of future RPAS-specific SARPs."[44]

It is most likely that the concept of RPAS as pilotless aircraft will continue to be as an accepted understanding and subsequent practice of ICAO's member States not only because of the SARPs already adopted, but also because the future development of SARPs will continue to be based on the idea that pilotless aircraft are aircraft operated without a pilot on board.

3.2.3.3 THE REQUIREMENT OF SPECIAL AUTHORISATION

The operations of UAS raise several concerns; however, by far, the most important is safety, that is, the risk of the following:

1. Interference and conflict with other airspace users and how to avoid mid-air collision; and,
2. Damage to the public and property on the ground.[45]

Annex 2 on Rules of the Air to the Chicago Convention 1944 addresses these concerns and sets out, *inter alia*, that an RPA shall be operated in such a manner as to minimise hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 4.[46] Under Appendix 4 of Annex 2, an RPAS shall operate following the conditions of the State of Registry, the State of the Operator (if different) and the States in which the flight is to operate.[47] Hence, special authorisation from a host country to enter its airspace is aimed at establishing the conditions for a pilotless aircraft to accept when operating in its airspace.[48]

UA shall meet the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.[49] For this reason, special authorisation is necessary to ensure its safe operation in the airspace of

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44 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015,1-8.

45 *'Drones. Unmanned Civil Aviation'*. Scribd. Accessed November 06, 2018. https://www.scribd.com/document/370576620/Drones-Unmanned-Civil-Aviation

46 *Annex 2, Rules of the Air* to the Convention on International Civil Aviation, 10th ed. Montreal: ICAO, 2005), 3-2.

47 *Annex 2, Rules of the Air* to the Convention on International Civil Aviation, 10th ed. Montreal: ICAO, 2005. APP 4-1.

48 Bernauw, and Kristian. *"Drones: The Emerging Era of Unmanned Civil Aviation."* Zbornik Pravnog Fakulteta U Zagrebu. April 29, 2016. Accessed November 06, 2018. https://hrcak.srce.hr/157605.

49 *Annex 2, Rules of the Air* to the Convention on International Civil Aviation. 10th ed. Montreal: ICAO, 2005. APP 4-1.

a State. The special authorisation neither relates to the exchange of air traffic rights, nor is aimed at permitting commercial operations. According to Mikko Huttunen, if non-scheduled UA flights could benefit from the right under Article 5 of the Chicago Convention 1944, it would "seem somewhat of a safety hazard given the current state of technology."[50] Article 8 is also consistent with the spirit of Article 1 of the Chicago Convention 1944 in assuring each contracting State has absolute jurisdiction and control over the operations of UAS in the airspace above its territory.

As UA are subject to compliance with the special authorisation, Appendix 4 of Annex 2 on Rules of the Air provides general norms for the operation of RPAS and the minimum requirements to request the special authorisation, namely:

> 1. General operating rules
> 1.1 A remotely piloted aircraft system (RP AS) engaged in international air navigation shall not be operated without appropriate authorisation from the State from which the take-off of the remotely piloted aircraft (RPA) is made.
> 1.2 An RPA shall not be operated across the territory of another State without special authorisation issued by each State in which the flight is to operate. This authorisation may be in the form of agreements between the States involved.
> 1.3 An RPA shall not be operated over the high seas without prior coordination with the appropriate ATS authority.
> 1.4 The authorisation and coordination referred to in 1.2 and 1.3 shall be obtained prior to take-off if there is reasonable expectation, when planning the operation, that the aircraft may enter the airspace concerned.
> 1.5 An RPAS shall be operated in accordance with conditions specified by the State of Registry, the State of the Operator, if different, and the State(s) in which the flight is to operate.
> 1.6 Flight plans shall be submitted in accordance with Chapter 3 of this Annex or as otherwise mandated by the State(s) in which the flight is to operate.
> 1.7 RPAS shall meet the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.
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> 3. Request for authorisation
> 3.1 The request for authorisation referred to in 1.2 above shall be made to the appropriate authorities of the State(s) in which the RPA will operate not less than seven days before the date of the intended flight unless otherwise specified by the State.
> 3.2 Unless otherwise specified by the State(s), the request for authorisation shall include the following: (…)

In the Manual on RPAS, ICAO has also incorporated a guideline that countries may consider for their assessment and approval of international opera-

50 Mikko Huttunen | University of Lapland – Academia.edu. Accessed November 05, 2018. http://ulapland.academia.edu/MikkoHuttunen.

tions by UAS. These recommendations are the outcome of requests to the ANC and the Secretary-General (12 April 2005) to invite a selected number of States and international organisations to present and foresee, *inter alia*, mechanisms that might facilitate the application, processing and issuance of special authorisations for the international operations of civil UAS.[51] The template proposed by ICAO, Request for Authorisation Form, is shown in Annex 2 of this research.

To facilitate the implementation and execution of the special authorisation process suggested by ICAO, States must consider four key elements, namely:[52]

1. Coordination with the air traffic service (ATS);
2. Conditions for the operation of UAS;
3. Copies of the respective certificates and licences; and,
4. Timeframe to apply for authorisation.

Several situations could arise when a UA enters the airspace of another State and under which prior coordination becomes an indispensable element, not only for flight safety-related matters but also on the grounds of national security. For example, a UA remote pilot would be required by ATS to take an alternate route as a consequence of adverse meteorological conditions, fly over restricted airspace or identify an alternate aerodrome in the case of an emergency. It is mandatory to coordinate with the corresponding ATS authority before starting any operation of an aircraft over the airspace above the high seas. This situation includes UA because they are a category of aircraft.[53]

Since several components are necessary to operate RPAS as a subset of UAS, certain conditions must be observed, such as the State of Registry, the State of Operator, if different, and by the State where the flight is performed. These conditions may include aspects related to the following elements:[54]

- Equipment as transponders;
- Flight hours and flight altitude;

51 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 1-2.

52 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 3-1.

53 *Annex 2, Rules of the Air* to the Convention on International Civil Aviation, Section 2.1.1: 'If, and so long as, a contracting State has not notified the International Civil Aviation Organization to the contrary, it shall be deemed, as regards aircraft of its registration, to have agreed as follows: For purposes of flight over those parts of the high seas where a contracting State has accepted, pursuant to a regional air navigation agreement, the responsibility of providing air traffic services, the "appropriate ATS authority" referred to in this Annex is the relevant authority designated by the State responsible for providing those services'.

54 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System* (*RPAS*), first edition 2015, April 2015, 3-2.

- Performance criteria, such as speed, climb and descent rates, turn radius, and others;
- Airspace classes; and,
- Qualification of operations personnel.

Just as in manned aviation, the submission of a flight plan for the operation of a UA in international airspace is necessary, as to which see the requirements of Annex 2, Chapter 3 of the *Rules of the Air*, to the Chicago Convention 1944. The flight plan is independent of the special authorisation previously discussed. The flight plan shall contain the information laid down in section 3.3 of Annex 2.[55]

The submission of the special authorisation shall also include copies of the correspondent certificates, licences of the remote pilots and the radio station licence.[56]

The authorisation shall be requested from the correspondent authorities of the States in which the UA will operate not less than seven days before the date of the intended flight, unless otherwise specified by the State.[57]

3.2.3.4 THE EXPRESSION 'TO OBVIATE DANGER'

Following the analysis of the central components of Article 8, the last element dictates that an "aircraft flown without a pilot shall be so controlled as to obviate danger to civil aircraft". The State to be overflown commits to take all steps to ensure that the flight of the UA does not affect the safety of civil aircraft.

Because Article 8 distinguishes between *pilotless aircraft* and *civil aircraft*, the drafters of the Chicago Convention 1944 might have recognised that a pilotless aircraft is not a civil aircraft and must, therefore, have a measure of control applying to them with the so-called 'due regard' obligation similar to that of 'State aircraft'.[58]

> …"Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft."[59]

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55 Section 3.3 Flight Plan of *Annex 2, Rules of the Air t*o the Convention on International Civil Aviation Rules of the Air, 3-7.

56 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015. 3-2.

57 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 3-2.

58 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 1-2.

59 See Article 8 on pilotless aircraft of the Chicago Convention 1944.

For a UA to be able to operate in proximity to civil aircraft, a remote pilot is still essential to warrant 'safety' and because the technology for aircraft that operate without pilot intervention, known as autonomous aircraft, is still under development.[60] The challenge that this situation creates is whether a 'pilotless aircraft' is not a 'civil aircraft' because it is treated differently according to Article 8; if so, then how can the Chicago Convention 1944 regimes and SARPs apply to UA engaged in civil use? The word 'use' must be highlighted as it is regardless of the design, markings or remote controllers.

The wording used in Article 8 points out that the drafters of the Chicago Convention 1944 had already identified the specific nature of UA and its potential risk when flying in regions open to civil aircraft. The clear distinction between UA and civil aircraft acknowledges that UA could, but should not, jeopardise the safety of air traffic and must, therefore, be so controlled as to obviate danger to civil aircraft.[61]

UA requires an equivalent level of safety to that of manned civil aircraft,[62] especially when flying in regions open to civil aviation. In this regard, the number of incidents caused by UA to civilian manned aircraft is increasing.[63] For instance, between December 19 and 21, 2018, the authorities at Gatwick Airport near London, England, cancelled hundreds of commercial flights because of reports alleging small UA sightings near the runway. This incident caused a massive disruption in the travel of about 140,000 passengers affected by the cancellation of approximately 1,000 flights.[64] Also, on February 15, 2019, the international airport of Dubai briefly suspended its operations because of an alleged UA sighting. The airport authorities reported that they delayed flights between 10:13 a.m. and 10:45 a.m. for the UA activity.[65]

In order not to affect civil air traffic and reduce the associated risk of flying without a pilot on board, UA must fly with at least an equivalent level of safety to mirror manned civil aircraft operations. This requirement is necessary to avoid jeopardy and increase the risk of flying in the same airspace with other civil aircraft, regardless of the situation that the UA itself may

60 See section 3.2.1 on Proximity of, *Annex 2, Rules of the Air* to the Convention on International Civil Aviation, Montreal: ICAO, 2005), 3–2.

61 Article 8 on pilotless aircraft of the Chicago Convention 1944.

62 ICAO Doc 10019 AN/507 *Manual on Remote Piloted Aircraft System (RPAS)*, first edition 2015, April 2015, 1-2.

63 See section 5.4 of Chapter 5 on incidents involving UAS.

64 Jamie Grierson. *'Gatwick Returns to Normality but Drone Threat Remains'*. The Guardian. Guardian News and Media, January 4, 2019. https://www.theguardian.com/world/2019/jan/04/gatwick-returns-to-normality-but-drone-threat-remains

65 Associated Press. *'Aeropuerto De Dubái Cancela Vuelos Por Drones'*. elnuevoherald. El Nuevo Herald, February 15, 2019. https://www.elnuevoherald.com/noticias/mundo/article226318085.html

be engaged in civil functions and therefore considered an unmanned civil aircraft flying in the same airspace not only with manned civil aircraft but also with other unmanned civil aircraft as well. In other words, UA shall fly with care and diligence and comply with the rules of the air at all times.

UA shall operate with due regard for the safety of a civil aircraft flying in the same airspace. However, what is due regard? Neither the Chicago Convention 1944 nor its SARPs define the term *due regard*.[66] Nevertheless, ICAO provides guidelines in the *Manual Concerning Interception of Civil Aircraft* (*Consolidation of Current ICAO Provisions and Special Recommendations*):

> "Principles to be observed by States
>
> 2.5 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft, due regard shall be had by contracting States to the following principles when developing regulations and administrative directives:
> a) Interception of civil aircraft will be undertaken only as a last resort;
> b) If undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome;
> c) Practice interception of civil aircraft will not be undertaken;
> d) Navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
> e) In the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned."[67]

The *Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations* provides additional criteria for due regard:

> "WHEREAS Article 3 (d) of the Convention requires that the contracting States undertake, when issuing regulations for their State aircraft, that they have due regard for the safety of navigation of civil aircraft; (…)
>
> 6.1 In order that due regard will be given to the safe and efficient operation of civil aircraft, States should ensure that military authorities responsible for planning and conducting activities potentially hazardous to such aircraft are fully

66 Ells, Mark. *'Unmanned State Aircraft and the Exercise of Due Regard'*. SSRN. March 21, 2015. Accessed November 07, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2580875

67 Doc 9433-AN/926 *Manual concerning Interception of Civil Aircraft* (*Consolidation of Current ICAO Provisions and Special Recommendations*) *Second Edition* 1990. Accessed November 08, 2018. http://www.wing.com.ua/images/stories/library/ovd/9433.pdf

informed, and conversant with, the following in respect of the area of activity:
a) the type(s) of civil aircraft operations;
b) the ATS airspace organisation and responsible ATS unit(s);
c) ATS routes and their dimensions; and
d) relevant regulations and special rules, including airspace restrictions"...[68]

Scholar Mark Ells concludes:

"...the essence of due regard is to maintain separation from other aircraft."[69]

The FAA definition of due regard also bolsters this conclusion:

"A phase of flight wherein an aircraft commander of a state-operated aircraft assumes responsibility to separate his/her aircraft from all other aircraft."[70]

Based on the above, UA shall have 'due regard' at all times, meaning appropriate separation from other civil aircraft for safety.

Finally, manned civil aircraft must comply with a complex set of safety-related SARPs and PANS, analysed in Chapter Five and aimed at reducing the risks associated with flight. In light of these circumstances, there is no relevant reason for UA to be exempted from this fundamental obligation, especially when engaged in civil functions. It is a safety obligation and a minimum standard of care that all aircraft, whatever they may be, shall have regarding other aircraft to preserve the safety of the whole aviation system.

3.3 GIVING MEANING TO ARTICLE 8 UNDER TREATY INTERPRETATION RULES

3.3.1 CAN THE PROVISIONS OF THE CHICAGO CONVENTION 1944 BE INTERPRETED UNDER VCLT RULES?

Article 4 states that the VCLT only applies to treaties concluded by States after its entry into force, which happened on 27 January 1980.

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68 Doc 9554-AN/932 *Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations*. Accessed November 08, 2018. http://dgca.gov.in/intradgca/intra/icaodocs/Doc%209554%20-%20Safety%20Manual%20Military%20Activities%20Hazardous%20to%20Civil%20AC%20Ops%20Ed%201%20(En).pdf.

69 Ells, Mark. '*Unmanned State Aircraft and the Exercise of Due Regard.*' SSRN. March 21, 2015. Accessed November 07, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2580875

70 Due Regard operations are referred to in FAA Orders JO 7110.65, JO 7610.4, and JO 7210.3. In order to institute Due Regard operations, both FAA Orders JO 7110.65 and JO 7610.4 say that the operation must be conducted under at least one of four conditions. FAA Order JO 7210.3 reads as though all four conditions must be met. This appears to be a misstatement of the requirements to conduct the operation and creates such a restrictive set of provisions as to make the operation unavailable in most cases.

> Article 4: Non-retroactivity of the present Convention
>
> "Without prejudice to the application of any rules set forth in the present Convention to which treaties would be subject under international law independently of the Convention, the Convention applies only to treaties which are concluded by States after the entry into force of the present Convention with regard to such States."

If the Chicago Convention 1944 was concluded on December 7, 1944, how can the rules of interpretation of the VCLT apply to such a treaty?

Under Article 5, the VCLT applies to any treaty that is the constituent instrument of an international organisation.

> Article 5:
> "Treaties constituting international organisations and treaties adopted within an international organisation
>
> The present Convention applies to any treaty which is the constituent instrument of an international organisation and to any treaty adopted within an international organisation without prejudice to any relevant rules of the organisation."

The Chicago Convention 1944 is not only the primary source of public international air law but also the instrument that established ICAO.[71] Until May 2019, the membership of ICAO stands at 193 States,[72] and the State Parties must observe their obligations accorded under the treaty. The Chicago Convention 1944 is, therefore, subject to the VCLT rules because it is the constituent instrument of an international organisation that has the responsibility for regulating the technical, economic, safety, security and environmental aspects of international civil aviation.[73]

Regardless that the Chicago Convention 1944 is the constituent instrument of ICAO, it is also subject to the general rules of treaty interpretation under VCLT because the VCLT mostly reflects customary international law. In this regard, the ICJ has stated, in several judgements, that Article 31 of the VCLT

71 See Article 43 Name and Composition of the Chicago Convention 1944.

72 *Status of the Convention on International Civil Aviation Signed at Chicago on 7 December 1944.* Accessed May 2019. https://www.icao.int/secretariat/legal/List%20of%20Parties/Chicago_EN.pdf

73 See Article 44 Objectives of the Chicago Convention 1944.

reflects customary international law.[74] For instance, in the case regarding *Libyan Arab Jamahiriya and Chad*, the ICJ stated the following:

> "41. The Court would recall that, in accordance with customary international law, reflected in Article 31 of the 1969 Vienna Convention on the Law of Treaties, a treaty must be interpreted in good faith in accordance with the ordinary meaning to be given to its terms in their context and in the light of its object and purpose. Interpretation must be based above all upon the text of the treaty. As a supplementary measure recourse may be had to means of interpretation such as the preparatory work of the treaty and the circumstances of its conclusion." [75]

Moreover, Articles 3(a) and 4 of the VCLT and paragraph eight of the preamble to the VCLT confirm that the rules of customary international law continue to govern questions not regulated by the VCLT.[76]

Because the rules of treaty interpretation of the VCLT are customary law, they also apply to treaties concluded before the entry into force of the VCLT like, in this case, the Chicago Convention 1944 or concluded afterwards but before the VCLT entered into force for Parties to those treaties. [77] Accordingly, the effect of Article 4 of the VCLT is to apply 'pure' Convention rules to treaties concluded after the entry into force of only the VCLT.[78] The customary rules for treaty interpretation laid down in the VCLT are, therefore, directly applicable to the Chicago Convention 1944.

Furthermore, Articles 82 and 83 of the Chicago Convention 1944 use the term *arrangements* to refer to obligations and understandings.

> Article 82
> Abrogation of inconsistent arrangements

74 See Sovereignty over Pulau Ligitan and Pulau Sipadan *(Indonesia/Malaysia)* (Judgment). 2002. ICJ Rep 625, para 37; See the case concerning the Auditing of Accounts *(Netherlands v France)*, Award (12 March 2004). XXV RIAA 267, paras 54–79; See *Salini Costruttori SpA and Italstrade SpA v Hashemite Kingdom of Jordan*, ICSID Case No ARB/02/13, Decision on Jurisdiction (9 November 2004). para 75; See *Phoenix Action Ltd vs Czech Republic*, ICSID Case No ARB/06/5, Award (15 April 2009), para 75.

75 Territorial Dispute *(Libyan Arab Jamahiriya v. Chad)* (Judgment), ICJ Rep 1994, paragraph 41.

76 *Vienna Convention on the Law of Treaties* (1969), Oxford Public International Law, June 6, 2017, https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1498

77 Paul McDade. 'The Effect of Article 4 of the Vienna Convention on the Law of Treaties 1969.' *International and Comparative Law Quarterly 35*, no. 03 (1986): 499-511. https://doi.org/10.1093/iclqaj/35.3.499.

78 Pure rules which are authoritative only as a result of inclusion in the Convention itself. For instance, in certain areas, particularly those importing new provisions regarding dispute settlement, interpretation and modification of a treaty and the rules relating to the adoption of the text of a treaty and reservations, VCLT rules do not have the status of customary international law.

> "The contracting States accept this Convention as abrogating all obligations and understandings between them which are inconsistent with its terms and undertake not to enter into any such obligations and understandings. A contracting State which, before becoming a member of the Organisation has undertaken any obligations towards a non-contracting State or a national of a contracting State or of a non-contracting State inconsistent with the terms of this Convention, shall take immediate steps to procure its release from the obligations. If an airline of any contracting State has entered into any such inconsistent obligations, the State of which it is a national shall use its best efforts to secure their termination forthwith and shall in any event cause them to be terminated as soon as such action can lawfully be taken after the coming into force of this Convention."

> Article 83
> Registration of new arrangements

> "Subject to the provisions of the preceding Article, any contracting State may make arrangements not inconsistent with the provisions of this Convention. Any such arrangement shall be forthwith registered with the Council, which shall make it public as soon as possible."

Treaties have been a particular interest of various disciplines, namely, international law, diplomatic and political history, international relations, foreign policy studies and negotiation theory. Of these disciplines, international law holds a central position in the practical consideration that governments, as treaty-makers, operate within a legal frame of reference.[79] The Chicago Convention 1944 is, therefore, an international agreement in which States have concluded principles and arrangements that are binding under international law, according to the rules of the VCLT.

3.3.2 ICAO'S ACTIONS TO GIVE MEANING TO ARTICLE 8 OF THE CHICAGO CONVENTION 1944

Was the intent of the drafters of the Chicago Convention 1944 to include in Article 8 a situation where there is no pilot on board the aircraft, but instead remotely controlled by a person? For instance, is the special authorisation for pilotless aircraft also applicable to UA engaged in non-scheduled or scheduled flights? Moreover, if a pilotless aircraft receives the same treatment as State aircraft, as per the analysis of Articles 3 and 8, how can the rules of civil aircraft apply to UA?

Under international law, there is no other way to interpret Article 8 of the Chicago Convention 1944 than to refer to the principles and rules of interpretation established in the VCLT and laid down in the theoretical framework shown in the introductory section of this research, as they are

79 Douglas Johnston. 'Theory, Concept and the Law of Treaties: A Cross-Disciplinary Perspective', Australian Yearbook of International Law, 114.

customary law that provides guidelines to answer these questions. Whatever legal perspective prevails concerning the interpretation of Article 8 of the Chicago Convention 1944, the result of the interpretation will impact the future development of UA as the application of the referred provision and under the predominant authoritative interpretation will be a catalyst or restraint to the cross-border operations of civil UA.

In the process of interpreting Article 8, ICAO has considered the intent of the drafters and the context in which the Chicago Convention 1944 was adopted. Remotely controlled and uncontrolled, autonomous aircraft were already in existence at the time of WWI and were operated by both civil and military entities. Aircraft flown without a pilot, therefore, refers to a situation where there is no pilot on board the aircraft.[80]

The first ICAO exploratory meeting on UAS, held in Montreal on May 23 and 24, 2006, aimed to define the role of ICAO in UAS regulatory advancement. The meeting concluded that there was a need to harmonise terms, strategies and principles concerning the regulatory framework and that ICAO should act as a focal point.[81]

The second informal ICAO meeting, held in Palm Coast, Florida, on January 11 and 12, 2007, concluded, *inter alia*, that there was a need to harmonise notions, concepts and terms. The second informal meeting also agreed that ICAO should coordinate a strategic guidance document to guide the regulatory evolution of UAS. Even though non-binding for State members of ICAO, the guidance documents would serve as the basis for the creation of regulations by various States and organisations. As regulatory material developed by States and organisations gain maturity, such material could be useful in the ICAO guidance document. The document would then serve as the basis for achieving consensus in the later development of SARPs. The second informal meeting also concluded that ICAO should serve as a focal point for global interoperability and harmonisation to create a regulatory concept, coordinate the improvement of UAS SARPs, contribute to the progress of technical specifications by other bodies and identify communication requirements for UAS activity.[82]

To help ICAO achieve the described aims, at the Second Meeting of its 175th Session on April 19, 2007, the ANC approved the establishment of the Unmanned Aircraft Systems Study Group (UASSG), with specific terms

80 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015, 1-1.

81 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015, 1-2.

82 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015, 1-2.

of reference and work programmes. The UASSG produced UAS (Cir 328), published in March 2011. The Circular showed the States a set of aspects that would require incorporation into the Annexes to the Chicago Convention 1944 to ensure UAS would comply with this treaty. On May 6, 2014, at the Second Meeting of its 196th Session, the ANC established the RPASP to further the work begun by the UASSG.

3.4 CONCLUDING REMARKS

As per the above analysis, Article 8 of the Chicago Convention 1944 applies to UA, whether autonomous or remotely piloted. The overflown States shall issue a special authorisation to enable the operations of UA, which shall comply with a due regard obligation at all times, regardless of the civil or State function it engages.

ICAO's conclusion that a pilotless aircraft refers to the situation where there is no pilot on board the aircraft is consistent with the rules of interpretation of VCLT. Therefore, RPA is a form of pilotless aircraft. The arguments below support ICAO's interpretation of Article 8:

- ICAO, as the governing body of international civil aviation, made this interpretation not arbitrarily but within a process of consultation with the member States, which acknowledged favourably in the understanding of RPA as pilotless aircraft;
- ICAO incorporated the first regulatory package for RPAS to Annex 2 on Air Rules, Annex 7 on Aircraft Nationality Registration Marks and Annex 13 on Aircraft Accident and Incident Investigation of the Chicago Convention 1944, with which ICAO's member States have been complying since then;
- Remotely controlled and autonomous aircraft were already in existence at the time of WWI and were engaged in civil and military functions; therefore, it has been in the understanding of States that aircraft flown without a pilot refers to a situation where there is no pilot on board the aircraft; and,
- The practice of the member States regarding RPA, confirmed by ICAO's surveys of August 2016 is that RPA are indeed pilotless aircraft governed by Article 8 of the Chicago Convention 1944.

Nevertheless, there is a divergence between what ICAO considers as pilotless aircraft, as manifested by the practice of States, and what the author of this study understands should be. The author is inclined towards an interpretation that first considers the ordinary meaning of the words because they reflect the real intent of the drafters and Parties to a legal instrument. Furthermore, Article 31 of the VCLT reflects the principle that the determination of the ordinary meaning of a term is undertaken in the context

of a treaty and the light of its object and purpose. There is no hierarchy between the three elements of Article 31. Rather, these elements reflect a logical progression because they are not mutually exclusive. If the fathers of the Chicago Convention 1944 understood that pilotless aircraft are aircraft without a pilot in the current context of technological development, an RPA should not fit within this definition because it has a pilot, albeit remote, except for autonomous aircraft and unmanned free balloons.

In this line of reasoning, interpreting Article 8 based on the ordinary meaning of the words, in the sense of excluding RPA, could even facilitate their access to foreign airspaces as operators would not have to request a special authorisation every time they require engagement in international air operations. This situation means, for instance, that an RPA could perform a non-scheduled flight under Article 5 of the Chicago Convention 1944 without having to request special authorisation from the State of destination or the States whose airspace the aircraft requires crossing. Because an RPA has a pilot that controls it, the RPA would fall into the category of a manned aircraft.

This interpretation also holds consistency with the Preamble of the Chicago Convention 1944, whose object and purpose, among others, is to develop:

> "...the international civil aviation in a safe and orderly manner and that international air transport services may be established by equality of opportunity and operated soundly and economically."

This interpretation does not intend whatsoever that the technological and regulatory needs to tackle safety and security challenges require no attention through the adoption of SARPs. RPA is a technological innovation with great potential for civil aviation, but in order to make their safe and routine operations a reality, together with other aircraft, it is essential to define and adopt specific regulations to address the particular risks inherent to their operation, aspects that the author will discuss in Chapter Five.

Although ICAO has the authority to interpret the Chicago Convention 1944 as seen above, the author deems that the interpretation process is dynamic, and there will always be room for new legal perspectives on the understanding of Article 8. It is necessary to emphasise that any intent of interpretation must follow the rules of interpretation of the VCLT, as they are customary international law and provide an accepted method and guidelines for interpretation that most States will acknowledge favourably.

The following chapter will analyse how the legal regimes of international air navigation and international air transport apply to the cross-border operations of UAS.