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

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4 ACCESS OF UNMANNED AIRCRAFT SYSTEMS TO FOREIGN AIRSPACE

4.1 SCOPE OF THIS CHAPTER

UAS will transform our daily activities because they have the potential not only to change how we transport cargo and mail around the world but also how we travel. When we find ourselves at the doorway of a new era of aviation where innovations generate new opportunities, will the current international legal framework permit UAS to engage in civil operations and access the airspace of other States or the airspace above the high seas?

This chapter aims to answer a part of this question, as it will focus on the analysis of Articles 5, 6, 7 and particularly 8, from the perspective of *lex specialis* of the Chicago Convention 1944 and whether the legal regimes of international air navigation and international air transport apply to UAS. This analysis also includes the application of the freedoms of the air and the role of the bilateral and multilateral agreements adopted among the States to enable international flights.

4.2 REGULATION OF INTERNATIONAL FLIGHTS OPERATED BY UNMANNED AIRCRAFT SYSTEMS

4.2.1 INTERNATIONAL AIR NAVIGATION

Even though the Chicago Convention 1944 and its Annexes make regular use of the terms *air navigation* and *international air navigation*, there are no official definitions. Even the Paris Convention 1919, with the official name of *Convention Relating to the Regulation of Aerial Navigation*, did not define the term. The definitions of SARPs, usually incorporated in the forewords of the Annexes to the Chicago Convention 1944, also refer to international air navigation without giving a precise significance of the term:

> *Standard:* Any specification for physical characteristics, configuration, materiel, performance, personnel or procedure, the uniform application of which is recognised as necessary for the safety or regularity of international air navigation and to which the 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.

> *Recommended Practice:* Any specification for physical characteristics, configuration, materiel, performance, personnel or procedure, the uniform application of which is recognised as desirable in the interests of safety, regularity or efficiency of international air navigation, and to which the contracting States will endeavour to conform in accordance with the Convention.[1]

The United Nations Convention on the Law of the Sea (UNCLOS) also applies the term *air navigation* in its normative body, again without a definition.[2]

Based on the context of how the Chicago Convention 1944 and its Annexes employ the term, air navigation refers to the technical and operational nature of the flight as it pertains to the process of planning, recording and controlling the movement of an aircraft from one place to another, regardless of the air transport service it provides.[3]

The author of this study, therefore, proposes that international air navigation involves piloting an aircraft while crossing the airspace of more than one State or operating in the high seas, complying with the rules applicable to aircraft and not jeopardising the safety of those on board or the ground.

4.2.2 INTERNATIONAL AIR TRANSPORT

4.2.2.1 AIR SERVICES AGREEMENTS AS THE BASIS OF INTERNATIONAL AIR TRANSPORT SERVICES

Undoubtedly, international air transport has contributed positively to the development of the modern world. Specifically, commercial aviation is a source of important economic income not only for the States but also for large international enterprises and domestic undertakings that generate substantial sources of employment worldwide.[4] International air transportation also facilitates trade among nations, supports the development of tourism of a region or a country and serves as a means for foreign relations. Because of its strategic character, the sovereignty of the States and the national interests in security, defence, foreign policy and trade, to name a few, are present in almost all aspects of aviation.

Under Article 6 of the Chicago Convention 1944, scheduled air services

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

2 *United Nations Convention on the Law of the Sea*. Accessed November 23, 2018. http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

3 Nathaniel Bowditch. 'Glossary.' *The American Practical Navigator* (New York, NY: Skyhorse, 2013), 815. 815.

4 '*Industry Performance*'. *ICAO World Civil Aviation Report / 2017*, Montréal, Canada: International Civil Aviation Organization, 2018, 18–34.

flights require prior authorisation[5] because the airspace of all contracting States to the Chicago Convention 1944 is closed *de jure* until States open it *de facto*, that is, for the operation of scheduled international air services.[6] Traditionally, bilateral air services agreements are the preferred mode for States to open their airspace to other States, engage in international air transport operations and regulate the economic aspect of such exchanges.

The texts of the bilateral and regional or plurilateral versions of the ICAO Template Air Services Agreements (TASAs) define the term *international air transportation*, namely:

> "...**international air transportation** is air transportation in which the passengers, baggage, cargo and mail which are taken on board in the territory of one State are destined to another State[7];
> ...**air transportation** means the public carriage by aircraft of passengers, baggage, cargo and mail, separately or in combination, for remuneration or hire."

The TASAs form a comprehensive framework of air services agreements that include draft provisions on traditional, transitional and most liberal approaches to the various elements in an air services agreement, including optional wording. The wording is based on model clauses or language developed by ICAO over the years on various air services agreement Articles such as capacity, tariffs, competition laws, doing business, aviation safety and security provisions.[8]

The other source for the language in the TASA provisions is the practice and usage of terms by States in their own Air Services Agreements. The text, for most of the provisions, therefore represents the most common and current usage by States in this field of international air transport.[9]

4.2.2.2 DIFFERENCE AND RELATIONSHIP BETWEEN INTERNATIONAL AIR TRANSPORT AND INTERNATIONAL AIR SERVICES

In addition to the terms *international air navigation* and *international air transport*, we often see the term *international air services* in aviation legal literature to point out international commercial flights. However, what does this term

5 See Article 6 on Scheduled Air Services of the Chicago Convention 1944.

6 Pablo Mendes de Leon and Kay Mitusch. *'Competition in Air Transport'*. January 24, 2018. Accessed July 30, 2019. http://www.europarl.europa.eu/RegData/etudes/STUD/2018/618984/IPOL_STU(2018)618984_EN.pdf

7 *Appendix 5 ICAO Template Air Services Agreements.* Accessed November 21, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

8 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

9 Appendix 5 *ICAO Template Air Services Agreements.* Accessed November 21, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

mean, and what are the legal implications for the cross-border operations of UAS? The Chicago Convention 1944 defines the term 'international air service' in Article 96:

> Article 96
>
> "For the purpose of this Convention, the expression:
> (a) 'Air service'- means any scheduled air service performed by aircraft for the public transport of passengers, mail or cargo.
> (b) 'International air service' means an air service which passes through the airspace over the territory of more than one State.
> (c) …
> (d) …."

Hence, international air services are flights performed for remuneration and according to a published timetable, which makes up a regular series of flights open to the public for the transport of passengers, mail or cargo and that crosses the airspace of one or more States or the high seas.

The main difference between international air transport and international air services is that the first is a general term that embraces non-scheduled flights and scheduled flights whereas the latter is limited to scheduled flights only, per Article 96 b) of the Chicago Convention 1944. Non-scheduled flights include a relatively small segment of general aviation, such as private flights, aerial works, air-taxi services and different charter operations, whereas scheduled international air services are the main component of international air transport.[10] When the author employs the term *international air transport*, it also includes international air services.

To enhance understanding of the three terms, the author proposes that *international air navigation* pertains to the technical and operational aspects of the flight and is subject to SARPs, whereas the terms *international air transport* and *international air services* relate to the economic aspects of flight for which States have not yet agreed on a global legal framework to govern the exercise of commercial aviation, as they are granted mainly on a bilateral or multilateral basis. Moreover, States apply their sovereignty rights over their territory not only for safety and security interests but also for their economic interests when admitting or denying a foreign aircraft to perform transport from or to their territories.[11]

10 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2012), 106-107.

11 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2012), 105.

4.2.2.3 CONCLUDING REMARKS

In conclusion, although the Chicago Convention 1944 mentions the terms *international air navigation*,[12] *international air transport*[13] and *international air service*,[14] all to point out international flights, each of these terms have different legal connotations, and only international air services have a formal definition in the referred treaty. These conclusions will be elaborated in the next sections.

4.3 THE REGIME GOVERNING INTERNATIONAL AIR NAVIGATION

4.3.1 INTERNATIONAL AIR NAVIGATION UNDER THE CHICAGO CONVENTION 1944

The Chicago Convention 1944 and its Annexes provide the regulatory framework for the international air navigation of aircraft, whereas the rules for international air transport are subject to bilateral or multilateral agreements between States because the Chicago Conference 1944 did not adopt rules to regulate the grant and exchange international air traffic rights.[15] Notwithstanding this issue, Article 5 grants non-scheduled flights the right to make flights into or across the territory of a State although for safety reasons, the State of destination may restrict routes for non-scheduled flights crossing remote regions or areas without air navigation facilities.

Article 44 of the Chicago Convention 1944 provides that among ICAO's aims and objectives, ICAO has a responsibility to "prevent economic waste caused by unreasonable competition". Article 15 also refers to economic

12 See Articles 11 on Applicability of air regulations, 20 on Display of marks, 21 on Report of registrations, 23 on Customs and immigration procedures, 27 on Exemption from seizure on patent claims, 44 on Objectives and 55 on Permissive functions of Council of the Chicago Convention 1944.

13 See the Preamble, Article 44 on objectives, 55 on Permissive functions of Council and the title Part III of the Chicago Convention 1944 on International Air Transport.

14 See Article 5 on Right of non-scheduled flights, 15 on Airport and similar charges, 54 on Mandatory functions of Council, 55 on Permissive functions of Council, 71 on Provision and maintenance of facilities by Council, and 96 on Definitions of the Chicago Convention 1944.

15 The Chicago Conference 1944 drafted side agreements to address traffic rights, including the *International Air Services Transit Agreement*, henceforth also referred to as the *Transit Agreement*, and the *International Air Transport Agreement.* The Transit Agreement provides for a multilateral exchange for scheduled international air services of the first two freedoms of the air and today 133 nations have ratified the treaty, though, some States such as the Russian Federation, Canada, Brazil, China and Indonesia are not members. The International Air Transport Agreement provides for a multilateral exchange for international air services of all five freedoms of the air. However, in the ensuing half century, only 11 nations ratified this agreement, and even the United States, its principal proponent, withdrew after ratification.

regulations by postulating that uniform conditions shall apply in using facilities provided by airports and air navigation services, charges to aircraft operators shall be non-discriminatory, and no charges shall apply for the transit over, entry or exit from the territory of a contracting State.[16] However, ICAO's primary scope of work has been the technical aspects of international air navigation, safety and security, as mandated by Article 44 a), b), c), h) and i) of the Chicago Convention 1944.[17]

Many provisions of the Chicago Convention 1944 apply or have a direct impact on international air navigation of aircraft, namely:

- Article 1 reaffirms the principle of State sovereignty over the airspace above its territory.
- Article 3*bis* stipulates that a State may require a civil aircraft flying above its territory without permission to land, but it may not use weapons against it, nor may it jeopardise the lives of the persons aboard it, or the safety of the aircraft.
- Article 8 prohibits pilotless flights without special permission.
- Article 9 mandates that a State may establish no-fly prohibited areas for military or public safety reasons. A State may require that aircraft finding themselves in prohibited areas must promptly land at a nearby airport.
- Article 11 stipulates that air navigation rules shall be non-discriminatory without distinction as to nationality; such local laws and regulations governing the operation and navigation of aircraft shall be complied with by aircraft upon entering or departing from or while within the territory of that State.
- Article 12 dictates that States ensure that aircraft in its territory or carrying its nationality shall comply with the rules and regulations relating to the flight and manoeuvre there in force; such domestic regulations shall be uniform, to the greatest possible extent with SARPs.
- Article 15 of the Chicago Convention requires:
  - Uniform conditions shall apply to the use of air navigation facilities by aircraft of every contracting State;
  - Air navigation charges shall not be higher for scheduled foreign aircraft than national aircraft engaged in similar international operations;
  - No charge may be imposed solely for the right of transit over, entry into, or exit from its territory;
  - Charges imposed shall be published and communicated to the ICAO Council; and

16 See Article 15 on Airport and similar charges of the Chicago Convention 1944.
17 See Article 44 on Objectives of the Chicago Convention 1944.

  - If a contracting State so requests, the ICAO Council may review such charges and report and make recommendations thereon to the concerned States.
- Article 22 establishes the general obligation of a State to facilitate and expedite navigation by aircraft and to prevent unnecessary delays;
- Article 25 provides that States must assist aircraft in distress;
- Article 26 requires a State in which an accident occurs involving death or serious injury to investigate the incident; the State of aircraft registry may appoint observers to the investigation;
- Article 28 prescribes that each State undertakes, so far as it finds practicable provides air navigation services such as airports, radio and meteorological services and other air navigation facilities within its territory under the SARPs outlined in the Annexes to the Chicago Convention 1944. Communications, codes, marking, signals, operating procedures, aeronautical maps and charts all must be consistent with applicable SARPs;
- Article 29 rules that every aircraft engaged in international air navigation shall carry the certificate of registration, the certificate of airworthiness, licences of the crew members, journey log book, radio equipment with its licence, the list of passengers and the cargo manifest;
- Articles 30 and 31 relate to the requirement for aircraft to carry radio transmitting equipment and hold a certificate of airworthiness by the State of registry when engaged in international air navigation;
- Article 32 requires the pilot and other crew members of every aircraft engaged in international air navigation to carry certificates of competency and licences issued by the State of registry;
- Article 33 obligates contracting States to recognise the certificates of airworthiness, competency and licences as valid, provided that such documents are equal to or above the minimum standards under the Chicago Convention 1944;
- Article 34 requires log books for every aircraft engaged in international air navigation, to include information about the aircraft and its crew on each journey;
- Article 35 prohibits the carriage of munitions or implements of war on aircraft engaged in international air navigation unless the overflown State approves it;
- Article 44 provides that ICAO shall develop the principles and techniques of international air navigation to promote safety in flight and encourage the development of air navigation facilities; and,
- Article 68 allows each State to designate the international air routes and airports in its territory. Articles 70, 71 and 74 allows the Council to finance, or provide, air navigation services or provide technical assistance.

The above provisions apply to the operations of UAS because their content is generally of transversal application to aircraft, thus including UA and not

specifically for manned aircraft. These provisions apply regardless of the condition of *manned* or *unmanned* aircraft.

Since the Wright brothers made the first controlled flight of a manned aircraft, 116 years had to pass before meeting the current technical standards for international air navigation. Hence, manned aviation is the benchmark. The method of trial and error was crucial in this process. One advantage which may facilitate the achievement of the same levels of safety for the international air navigation of UA, is the overall accumulated knowledge developed through manned aviation.

4.3.2 OPPORTUNITIES AND CHALLENGES OF UNMANNED AIRCRAFT ENGAGED IN INTERNATIONAL AIR NAVIGATION

For UA to engage in international air transport, they must comply with ICAO's international air navigation rules since they must be able to fly safely before carrying passengers, cargo or mail. Moreover, because UA is an aircraft and has the technical capacity, as per the new technological developments described in Chapter One, to engage in international air navigation, UA may also be capable of performing international air transport as UAS operations go beyond surveillance, photography or videos. As noted in Chapter One, UA have the potential to carry passengers, cargo and mail internationally.[18]

Even though the circumstances in which a UAS unfolds suggest that there should be no differentiation between manned and unmanned aircraft with regards to safety and security and the technical-operational nature of the flight, ICAO is working to build regulatory distinctions based on the complexity of the UAS components and the nature and risk of its operations.[19]

Because international air navigation involves a situation in which an aircraft crosses an international border or operates in high seas airspace,[20] UAS confronts situations that require the attention of ICAO and the States when creating rules, pursuant to which the UA only, the remote pilot station only or both the UA and the remote pilot station operate in another location than

18 See Section 1.3.2 of Chapter One on *The Potential Use of Unmanned Aircraft in International Civil Aviation*.

19 *'Remotely Piloted Aircraft System (RPAS) Concept of Operations (CONOPS) for International IFR Operations.* 'Icao.int. Accessed April 19, 2018. https://www.icao.int/safety/UA/Documents/RPAS%20CONOPS

20 There is no official definition of 'international air navigation'. However, the author has proposed the following meaning: international air navigation involves piloting an aircraft while crossing the airspace of more than one State or operating in the high seas, and complying with the rules applicable to aircraft, and not jeopardising the safety of those on board or the ground'.

the territory of the State of the operator.[21] For instance, a UA registered in a State other than the State of the operator engaged in aerial works,[22] such as the location and finding of schools of tuna, could be controlled by a remote pilot who is simultaneously controlling other airborne UA engaged in the same operation. This scenario presents additional challenges if the following are present:

A. The UA is operating in the airspace of only one State (State A), while it is remotely piloted from a remote pilot station located in any other State (State B);
B. Either the UA or the remote pilot station is operated, respectively, from a platform on the high sea airspace; or
C. The UA and the remote pilot station are both being operated in the territory of a State other than the State of the operator of the UAS.[23]

Another scenario is possible when the UA engages in international air navigation of long duration.[24] In this type of event, multiple distributed remote pilot stations may be necessary. These remote pilot stations may be at different aerodromes or off-aerodrome locations or even in different States, as determined by the operator's infrastructure or need for communications coverage. When remote pilot stations are located across different States, new challenges emerge. For example, the management and oversight of remote pilot stations and the remote pilots flying the UA, wherever they are located, are a significant issue for both the operator and the operator's regulator. However, the legal aspects of jurisdiction and enforcement, when actions are necessary, are new topics that will need to be addressed and resolved.[25]

These situations create legal implications for the responsibilities of the UAS operators and for the State, where the operation of the UA is carried out. The author notes that the current international regulatory framework does not yet address these scenarios. Hence, they require immediate attention from ICAO and its member States.

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21 '*Remotely Piloted Aircraft System (RPAS) Concept of Operations (CONOPS) for International IFR Operations*'. Icao.int. Accessed April 19, 2018.

22 *Aerial Work*: An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc. See Annex 6 to the Convention on International Civil Aviation Operation of Aircraft Part I – *International Commercial Air Transport – Aeroplanes*, Tenth Edition, July 2016, 1-1.

23 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015, 2-3.

24 *'Cargo Drones'*. IATA. Accessed May 03, 2018. http://www.iata.org/whatwedo/cargo/Pages/cargo-drones.aspx

25 *Remotely Piloted Aircraft System (RPAS) Concept of Operations (CONOPS) for International IFR Operations*." Icao.int. Accessed April 19, 2018. https://www.icao.int/safety/UA/Documents/RPAS%20CONOPS

In this line of reasoning, SARPs from the Chicago Convention 1944, particularly Annex 1 on *Personnel Licensing* and Annex 6 on *Operations of Aircraft*, should incorporate regulations to allow a qualified UA remote pilot to operate multiple UA engaged simultaneously in international air navigation without jeopardising safety and security. For instance, the operator and the UA pilot shall be in the capacity of not only managing and operating the flight safely and orderly but also responding adequately in case of an emergency of one or more UA at the same time. The Annexes to the Chicago Convention 1944 should also be able to outsmart the licensing, certification and accident investigation process under the scenarios presented above.[26]

Based on the exponential progress of UAS technology, and as the compliance process to meet safety standards and regulations advances, the author estimates is likely that UAS will embrace international air transport as a routine operation in the coming years. Such operations will include, for instance, commercial international air services, general aviation operations, aerial works and commercial air transport of cargo and mail and, ultimately, passengers. Nevertheless, from an economic perspective, it is unclear how significant the cost-benefit will be for an air transport company to switch from manned aircraft to UA,[27] as pilots—in this case, a remote pilot—will be still essential for the flight. Moreover, in the carriage of persons, cabin crews will also continue to be indispensable because they perform in the interest of passengers' safety. However, this might not be the case for UA engaged in aerial works, such as agriculture, construction, photography, surveying, observation, search and rescue, aerial advertisement and so forth because they do not require cabin crew to fly.

Similarly, UA engaged in the commercial air transport of cargo and mail may also be cheaper to operate and more productive than manned cargo aircraft, and cheaper because fewer crew members will be needed for the overall operation.[28] Correspondingly, the remote pilot could simultaneously handle several UA in aerial work and cargo scenarios: for example, on long flights there will be no need for additional crew, except for the regular shift after the flight duty period has been completed.[29]

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26 See Article 37 on the Adoption of International Standards and Procedures of the Chicago Convention 1944.

27 Brian F. Havel and John Q. Mulligan. 'Unmanned Aircraft Systems: A Challenge to Global Regulators', *DePaul Law Review*, 65.1., 2015) 117.

28 'The Platform *for Unmanned Cargo Aircraft (PUCA)'"* Platform Unmanned Cargo Aircraft. Accessed November 30, 2018. https://www.platformuca.org/.

29 See the definition of Flight duty period** on ICAO Doc 10019 AN/507 '*Manual on Remote Piloted Aircraft System* (*RPAS*)', first edition 2015, April 2015: A period which commences when a remote crew member is required to report for duty that includes a flight or a series of flights and which finishes when the remote crew member's duty ends. (*A term that is used differently from a formally recognized ICAO definition is noted with two asterisks***)*

Projects have begun to build cheaper UA than manned aircraft as there is no need for life support systems and, with cargo UA, could be more efficient in fuel and energy consumption by choosing a relatively low cruising speed.[30] Increased productivity will be possible because limitations on crew flight time and the need to return crews to their base of operations are absent. The advantages of UAS are also manifested by small aircraft where crew salaries make up a relative percentage of operating costs. The less crew the aircraft requires, the less impact on its operating cost. UAS have the potential to open new market opportunities around the world in areas without high-quality transportation services because the demand is uneconomical or geographical barriers limit the efficiency of the ground infrastructure.[31]

The aviation industry is also developing technical solutions to control UA through data links from remote locations. These technological advancements include reliable DAA functionality, C2 Link and mitigating cybersecurity threats. As the industry pushes and States and ICAO continue the long-term work of promulgating air navigation rules for UA, we will soon have sound data based on the feedback, experience and associated data from C2 Link and DAA, including industry stakeholders, such as operators and UAS manufacturers who will contribute to building SARPs based on operational needs while ensuring safety and security.[32]

The management of the frequency spectrum also requires attention, as it is a scarce natural resource under the International Telecommunications Union (ITU) supervision. At the 2015 ITU World Radio-Communication Conference, State members of the ITU agreed to Resolution 155 (WRC-15), which facilitates the use of the satellite service spectrum to provide C2 links beyond the radio line of sight. Nevertheless, some aspects of the resolution will rely on new SARP developments.[33]

ICAO has published online the *Remotely Piloted Aircraft System (RPAS) Concept of Operations for International IFR Operations* (CONOPS), which describes the operational environment into which UAS are integrating, thereby ensuring a common understanding of the challenges. The 39th Session of the Assembly held from September 27 to October 7, 2016, urged ICAO to develop provisions that support safe RPAS operations, including awareness

30 *"The Platform for Unmanned Cargo Aircraft (PUCA)."* Platform Unmanned Cargo Aircraft. Accessed November 30, 2018. https://www.platformuca.org/.

31 *"The Platform for Unmanned Cargo Aircraft (PUCA)."* Platform Unmanned Cargo Aircraft. Accessed November 30, 2018. https://www.platformuca.org/

32 *Remotely Piloted Aircraft System (RPAS) Concept of Operations (CONOPS) for International IFR Operations*. Accessed February 09, 2019. https://www.icao.int/safety/ua/documents/rpas%20conops.pdf

33 *Thirteenth Air Navigation Conference Montreal, Canada, 9 to 19 October 2018.* Remotely Piloted Aircraft Systems (RPAS) (Presented by the Secretariat). Accessed December 1, 2018. https://www.icao.int/Meetings/anconf13/Documents/WP/wp_006_en.pdf

and educational campaigns, and to promote the exchange of information among States regarding their UA regulation.[34]

4.3.3 CONCLUDING REMARKS

In conclusion, for a UA to be able to engage in international air transport, it must satisfy the rules of the Chicago Convention 1944 and its Annexes regarding international air navigation. It requires not only special authorisation from all overflown States but also the applicable operator and airworthiness certificates. UAS must be capable of complying with the communications and navigation requirements according to the SARPs mandate, and remote pilots shall hold corresponding licences. As in manned aviation, a flight plan is essential before the flight.[35]

It is also necessary to adopt new SARPs that address different scenarios in which UAS may unfold, as described in the previous section. For instance, a UA cannot fly safely in non-segregated airspace along with manned aircraft or take contingency actions when facing dangerous situations, such as severe weather conditions or latent accidents or incidents involving other airspace users or obstacles.

4.4. THE REGIME GOVERNING THE INTERNATIONAL AIR TRANSPORT OF UNMANNED AIRCRAFT UNDER THE CHICAGO CONVENTION 1944

4.4.1 PURPOSE OF THIS SECTION

The analysis of the subsequent sections will focus on the international air transport of UA under the modalities of non-scheduled flights, scheduled air services and cabotage. The study will address the legal principle of *lex specialis derogat generalis* as applied to Article 8 in relation to Articles 5, 6 and 7 of the Chicago Convention 1944, since Article 8 specifically governs the operation of pilotless aircraft.

Attention is also given to the carriage of cargo and mail, as they may represent a scenario likely to occur soon by using UA. Reasons range from new technological developments and cost savings of crews to lower fuel costs and more flexibility in flight schedules. Accordingly, UA international flights will be subject to particular compliance with the provisions of Articles 5, 6, 7 and 8 of the Chicago Convention 1944.

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34 See Assembly 39th Session – Technical Commission Report (Doc 10071, A39-TE).

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

4.4.2 PRINCIPLES GOVERNING INTERNATIONAL AIR TRANSPORT UNDER THE CHICAGO CONVENTION 1944

During the discussion of the free exchange of traffic rights at the Chicago Conference of 1944, the interests of the US clashed with the UK and other nations.[36] As a consequence, the Chicago Convention 1944 could not incorporate a legal regime for the exploitation of commercial air transport. The Chicago Convention 1944 neither provides rules for international air transportation nor for the operation of international air services. Accordingly, States have traded the freedoms of the air as to which see section 4.5.4 below through bilateral and multilateral negotiations in the form of agreements based on the footing of Article 6 of the Chicago Convention 1944.

Colin Thaine describes the legal regime that governs international air transport with a simple postulate: "All commercial international air transport services are forbidden except to the extent that they are permitted".[37]

The following principles govern the legal regime of international air transport:

1) Each State has sovereignty and jurisdiction over the airspace directly above its territory, including territorial waters;
2) Each State has complete discretion as to the admission or non-admission of any aircraft to the airspace under its sovereignty; and,
3) Airspace over the high seas and other parts of the earth's surface not subject to any State's jurisdiction is free to the aircraft of all States.[38]

Article 5 of the Chicago Convention 1944 lays out traffic rights for non-scheduled flights, though restricted by regulations, conditions or limitations as the underlying State may deem appropriate.[39]

Article 6 prohibits scheduled international flights over the territory of a State, except with the special permission of that State and under the terms of such authorisation.

Article 7 permits the carriage of air traffic between points that are both within the territory of one State, provided that the State in whose territory the foreign aircraft operates allows such flights.

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36 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 105.

37 Brian F. Havel. *Beyond Open Skies*: *A New Regime for International Aviation* (Austin: Wolters Kluwer, 2009), 9.

38 Oliver J. Lissitzyn. *The Diplomacy of Air Transport.* Foreign Affairs. October 11, 2011. Accessed December 03, 2018. https://www.foreignaffairs.com/articles/global-commons/1940-10-01/diplomacy-air-transport

39 See Article 5, Right of Non-Scheduled Flight of the Chicago Convention 1944.

Article 8 is even more explicit; no aircraft without a pilot shall fly over the territory of a State unless it holds a special authorisation.

Because these provisions in the Chicago Convention 1944 make reference to the cross-border operations of aircraft, they might raise conflicting applications for the operation of UAS, which creates two types of legal challenges *first*, the application of conflicting rules diminish legal certainty, and *second*, they put legal subjects in an unequal position vis-à-vis each other.[40] The analysis of each provision must begin, therefore, not with a sequential numerical order, but rather by one of the legal principles here, by the principle of *lex specialis derogat generalis* because Article 8 would be the exception to the general provisions of non-scheduled, scheduled, and cabotage flights laid down in Articles 5, 6 and 7 of the Chicago Convention 1944, respectively.

4.4.3 THE PRINCIPLE OF *LEX SPECIALIS DEROGAT GENERALIS* ON THE OPERATION OF UNMANNED AIRCRAFT

4.4.3.1 LEX SPECIALIS IN RELATION TO ARTICLE 8 OF THE CHICAGO CONVENTION 1944

Does the principle of *lex specialis* apply to Article 8 of the Chicago Convention 1944? Is there any way to determine whether Article 8 is a general rule or a special one? The principle that a special rule overrides the general rule has a long tradition in international law.[41] The Dutch jurist Hugo Grotius has stated the following:

> "What rules ought to be observed in such cases [i.e. where parts of a document are in conflict]. Among agreements which are equal...that should be given preference which is most specific and approaches most nearly to the subject in hand, for special provisions are ordinarily more effective than those that are general."[42]

By this statement, Grotius highlighted that a special rule is more to the point than a general rule and regulates the matter more effectively than general rules because special rules are better able to consider particular circumstances.

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40 International Law Commission Study Group on Fragmentation Koskenniemi. '*Fragmentation of International Law*'. http://legal.un.org/ilc/sessions/55/pdfs/fragmentation_outline.pdf. Accessed February 28, 2019.

41 'The principle is, in truth, a general principle of law recognized in all legal systems, and was cited as such in the drafting of Article 38 of the Statute of the Permanent Court of International Justice. It follows that if the *lex specialis* contains dispute settlement provisions applicable to its content, the *lex specialis* prevails over any dispute settlement provision in the *lex generalis*', ITLOS, *Southern Bluefin Tuna* case, (27 August 1999), para 123.

42 Hans Thieme. *Hugo Grotius: De Jure Belli Ac Pacis Libri Tres* (Göttingen: Vandenhoeck, 1953. XXIX),

However, one challenge in the *lex specialis* principle is that it follows from the relative lack of clarity in the distinction between general and special rules. Every general rule is also special because it deals with some particular issue.[43] For example, the author considers that Articles 5, 6, 7 and 8 govern flight over the territory of the contracting States to the Chicago Convention 1944. Each of these Articles is also a special rule, namely:

- Article 5 sets out the conditions that govern specifically *non-scheduled flights*;
- Article 6 also has a special character, as it rules aircraft engaged in *scheduled air services*;
- Article 7 institutes the circumstances in which States may allow *cabotage* operations within their territories, and;
- Article 8 establishes the substance to allow *pilotless aircraft* operations in foreign airspace.

On the other hand, a special rule is also a general one, as it is a characteristic of rules that they apply to a class generally. Every rule may be expressed in the following format: For every *x*, it is true that the obligation or right *y* applies.[44] For instance, Article 5 applies to 'all aircraft', being *x* 'without the necessity of obtaining prior permission if not engaged in scheduled international air services' being *y*.[45] For Article 6, *x* is the expression 'no scheduled international air service may be operated,' whereas *y* is 'except with special permission'.[46] In Article 7, *x* is 'aircraft of other contracting States to take on in its territory passengers, mail and cargo…' and *y* is 'each contracting State shall have the right to refuse permission'.[47] Finally, for Article 8, *x* is 'no aircraft being flown without a pilot', while *y* is 'shall be flown without special authorisation'.[48] Even where the occasions for the application of a special rule are few, in order for the standard to be a rule, it must be 'generally' applied. As we can see, Articles 5, 6, 7 and 8 regulate the access of aircraft to foreign airspace but, at the same time, each of them also applies to a specific case.

How can we then approach a solution to this legal dilemma? Generality and speciality are relational, and a rule is neither *general* nor *special* in the

43 Koskenniemi, M. International Law Commission Study Group on Fragmentation. *Fragmentation of International Law; the function and scope of the lex specialis rule and the question of self-contained regimes'*. http://legal.un.org/ilc/sessions/55/pdfs/fragmentation_outline.pdf Accessed February 28, 2019.

44 International Law Commission Study Group on Fragmentation Koskenniemi. *'Fragmentation of International Law,* http://legal.un.org/ilc/sessions/55/pdfs/fragmentation_outline.pdf Accessed February 28, 2019.

45 See Article 5 on non-scheduled flight of the Chicago Convention 1944.

46 See Article 6 on scheduled air services of the Chicago Convention 1944

47 See Article 7 on cabotage of the Chicago Convention 1944.

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

abstract but in relation to some other rule.[49] Under this approach, no rule can be determined as general or special in the abstract without regard to the situation in which its application is sought.

Thus, a rule may be applicable as the general law in some respects. For instance, Articles 5, 6, 7 and 8 govern flight over the territory of contracting States as a general rule, while each may appear as a particular rule in other aspects, namely, non-scheduled flights, scheduled air services, cabotage and pilotless aircraft, respectively. In other words, a rule may be general or special regarding its subject matter or the number of actors whose behaviour the rule regulates. For example, under international law, rules can, by agreement, be derogated from particular cases or between particular Parties.

This was the situation in the *Right of Passage* case.[50]Moreover, after having determined that the relevant practice had been accepted by the States *India* and *Britain/Portugal* and established a limited right of transit passage, the ICJ concluded that it did not need to investigate the content of general principles of law or custom on this matter: 'such a particular practice must prevail over any general rules'.[51]

A different example illustrates when *lex specialis* is an exception to legal normality, such as the laws of war. It seems clear that at least in the absence of evidence to the contrary, the laws of war must be regarded as *leges speciales* in relation to and thus override, rules laying out the peace-time norms relating to the same subjects.[52] Another example of a set of *leges speciales* are the rules on derogation from human rights in situations of national emergency. A slightly different type of situation existed in the *Legality of Threat or Use of Nuclear Weapons* case, in which the ICJ discussed the relationship between Article 4 of the International Covenant on Civil and Political Rights and the laws applicable in armed conflict. Article 4 established the right not to be arbitrarily deprived of one's life. This right, the Court pointed out, also applies in hostilities. The Court stated that "the test of what is an arbitrary deprivation of life, however, then falls to be determined by the applicable

49 International Law Commission Study Group on Fragmentation Koskenniemi. *'Fragmentation of International Law'*. http://legal.un.org/ilc/sessions/55/pdfs/fragmentation_outline.pdf. Accessed February 28, 2019.

50 ICJ, *North Sea Continental Shelf* cases, Reports 1969. 42, para 72. In the *North Sea Continental Shelf* case, the ICJ confirmed that 'it is well understood that, in practice, rules of [general] international law can, by agreement, be derogated from in particular cases or as between particular parties'. In this case, the Court noted that 'it would no doubt have been possible for the Parties to identify in the Special Agreement certain specific developments in the law of the sea of this kind, and to have declared that in their bilateral relationships in the particular case such rules should be binding as *lex specialis*'.

51 ICJ, *Right of Passage* Case, Reports 1960, 44.

52 C. W. Jenks. *'The Conflict of Law-Making Treaties,'* XXX BYIL, 1953), 446.

lex specialis, namely, the law applicable in armed conflict designed to regulate the conduct of hostilities."[53]

The author considers that the principle of *lex specialis derogat generalis* applies to Article 8 in relation to Articles 5, 6 and 7 to the extent that the term 'special authorisation' or 'special permission' is present in all four provisions, and that Article 8 has a special regime that rules only, and exclusively to UA. The following arguments support this opinion:

1. Although Article 8, like Articles 5, 6 and 7, rule the access of aircraft to airspaces of other States, Article 8, in relation to the others, governs UA exclusively. In other words, Article 8 does not govern the operation of aircraft that has a pilot on board, but to those that are controlled remotely or with no pilot intervention at all.[54]
2. Articles 5, 6 and 7 do not refer explicitly to UA but might have the character of general rules in relation to Article 8 as these provisions apply to aircraft engaged in international air transport, regardless of their manned or unmanned condition.[55] The author considers it as impracticable to argue that Articles 5, 6 and 7 are *leges speciales* in relation to Article 8 because none of the three provisions pertain solely to UA. This situation means that either a manned aircraft or UA can engage in non-scheduled flights, scheduled international air services or cabotage. However, due to the *lex specialis* nature of Article 8, UA will always need special authorisation to cross or land in another State.
3. On no account does the author suggest that Articles 5, 6 and 7 do not apply to the operation of UA. Non-scheduled flights, scheduled air services and cabotage, ruled by the referred Articles, are provisions on economic aspects of international air transport, which Article 8 does not address. Articles 5, 6 and 7 indeed apply to UA to the extent that they rule the aspects not addressed by Article 8 as *lex specialis*. In other words, Articles 5, 6 and 7 also govern UA when engaged in non-scheduled flights, scheduled air services and cabotage, respectively, with the characteristic that the aircraft involved in the operation is pilotless. UA shall hold a prior special authorisation of technical nature[56] and keep due regard at all times with respect to other aircraft, as required by Article 8. From a different perspective, Article 8 applies to UA regardless of the commercial operation such aircraft engages, including non-scheduled flight, scheduled air services or cabotage.

53 ICJ, *"Legality of the Threat or Use of Nuclear Weapons,'* Reports 1996 p. 13-14 (mimeo) para 25.
54 See Article 8 on pilotless aircraft of the Chicago Convention 1944.
55 See Articles 5, 6 and 7 of the Chicago Convention 1944.
56 See Appendix 5 of *Annex 2 on Rules of the Air* of the Chicago Convention 1944 and ICAO Doc 10019 AN/507. In *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal: International Civil Aviation Organization, 2015), App. A-1.

4. Finally, the practice of States, as evidenced in ICAO's survey of August 29, 2016, is that States treat UA as aircraft subject to the application of Article 8 on pilotless aircraft and, therefore, a special authorisation will always be necessary, regardless of the commercial operation in which the aircraft engages.

The Proceedings of the International Civil Aviation Conference, held in Chicago from November 1 to December 7, 1944, does not specifically refer to the debates regarding the adoption of Article 8 on pilotless aircraft to determine additional elements supporting the argument of Article 8 to qualify as *lex specialis*. As noted in Chapter Two, the Indian delegation to the Conference proposed the insertion of the pilotless Article, which the Paris Convention 1919, amended by the Protocol of June 15, 1929, incorporated in its Article 15.[57]

4.4.3.2 CONCLUDING REMARKS

As in the analysis above, for a UA to transit or make a stop for non-traffic purposes in the territory of another State under Article 5, it will always require prior authorisation under Article 8, even if exempted by Article 5. Likewise, if a UA is employed in services other than scheduled international air services, it shall comply not only with the regulations, conditions or limitations in the State where the embarkation or disembarkation takes place, but shall also obtain prior authorisation as per the mandate of Article 8.

Similarly, for scheduled air services, the operator of the UAS will require prior authorisation because both Article 6 and Article 8 demand it.

For the operation of UAS under cabotage, the same criterion applies because the UA will require prior authorisation under Article 7, and also under Article 8 as *lex specialis*.

The preceding reflections also suggest that if a legal subject, such as an air carrier or a State, invokes something as its right—such as the right of access to foreign airspace —then the competent body of the foreign State decides whether the claimant, that is, the legal subject, has the right invoked or does not have it. Under Article 1 of the Chicago Convention 1944, all States exercise sovereignty over their airspace and, under Article 8, pilotless aircraft always require special authorisation. If a UAS operator claims to have the privilege of taking on or discharging passengers, cargo or mail in another State under Article 5, for instance, the latter may declare, at its discretion, whether to grant or deny such permission to the UA by referring to Article 8 of the Chicago Convention 1944.

57 See section 2.1.2 of this research.

The author considers that even if we take Article 8 and the principle of *lex specialis derogat generalis* out of the equation, the Chicago Convention 1944 will always require an aircraft and prior authorisation—whether manned or unmanned—as a consequence of the sovereignty principle when engaged in a cross-border operation.

The exception to this requirement is laid down in Article 5, but the expression 'without the necessity of obtaining prior permission' refers to formal permission, usually granted through diplomatic channels. This exception does not mean the complete freedom to fly with no regulation since the flight has to observe the terms of the Chicago Convention 1944. It must have an approved flight plan, a determination of permission to cross the national boundary and the State overflown may require landing and customs inspection or a search under Article 16 of the Chicago Convention 1944.[58] Similarly, a charter flight operated by a UA does not require formal prior permission through diplomatic channels, but the privilege granted by this provision is subject to the national laws of the granting State.

The following subsections specifically analyse the application of Articles 5, 6 and 7 to the operation of UA.

4.4.4 NON-SCHEDULED FLIGHTS

Article 5 of the Chicago Convention 1944 governs the operation of non-scheduled flights. The provision states:

> Article 5: Right of non-scheduled flight
>
> "Each contracting State agrees that all aircraft of the other contracting States, being aircraft not engaged in scheduled international air services shall have the right, subject to the observance of the terms of this Convention, to make flights into or in transit non-stop across its territory and to make stops for non-traffic purposes without the necessity of obtaining prior permission, and subject to the right of the State flown over to require landing. Each contracting State nevertheless reserves the right, for reasons of safety of flight, to require aircraft desiring to proceed over regions which are inaccessible or without adequate air navigation facilities to follow prescribed routes or to obtain special permission for such flights.
>
> Such aircraft, if engaged in the carriage of passengers, cargo or mail for remuneration or hire on other than scheduled international air services, shall also, subject to the provisions of Article 7, have the privilege of taking on or discharging passengers, cargo or mail, subject to the right of any State where such embarkation or discharge takes place to impose such regulations, conditions or limitations as it may consider desirable."

58 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 108.

Although the Chicago Convention 1944 distinguishes between *non-scheduled flights* and *scheduled air services*, it defines neither of them. ICAO also provides complementary guidance to understand Article 5, which may be useful when applying the operation of UA. Additionally, some terms in the Article require further description to facilitate a thorough analysis. In this process, attention is essential to the significance of the following phrases used in the first paragraph of Article 5, namely:

1. All aircraft of the contracting States;
2. Aircraft not engaged in scheduled international air services; and
3. Non-traffic purposes.

To begin with, the first paragraph of Article 5 requires that each contracting State grant the rights of transit and non-traffic stops to all international non-scheduled flights by aircraft of other contracting States, without the necessity of obtaining prior permission.[59] Accordingly, under this portion of the provision, a UA may have the right to perform three types of flight:

1. Entry into and flight over a State's territory without a stop;
2. Entry into and flight over a State's territory with a stop for non-traffic purposes; and,
3. Entry into a State's territory and a final stop in that territory for non-traffic purposes.

The expression 'all aircraft of the contracting States' means all aircraft involved in uses other than those specified in Article 3 b), which refers to State aircraft and is out of the scope of the Chicago Convention 1944. A UA engaged in the modality of a non-scheduled flight, therefore, is subject to compliance with the conditions laid down in Article 5 and all the rights and obligations therein attained.

The second element of Article 5 alludes to the words 'aircraft not engaged in scheduled international air services'. Because the Chicago Convention 1944 defines neither non-scheduled flights nor scheduled international air services, a report from the ICAO Council supports the concept of such activities.[60] In that document, the Council did not define non-scheduled flights. Instead, to guide States in the interpretation and application of Articles 5 and 6 of the Chicago Convention 1944, it adopted a definition of

59 *"Manual on the Regulation of International Air Transport (Doc 9626)"* (Montreal: ICAO, 2016).

60 See ICAO Doc 7278-C/841 of May 10, 1952, *'Definition of a Scheduled International Air Service'*. Report by the Council to contracting States on the Definition of a Scheduled International Air Service and the Analysis of the Rights Conferred by Article 5 of the Convention. Adopted in March 28, 1952 and ICAO Doc 9587 Policy and Guidance Material on the Economic Regulation of International Air Transport, Third Edition, 2008.

the term *scheduled international air service*. Such interpretation also incorporated specific notes on the application of the definition and analysis of the rights conferred by Article 5. Under the view of the ICAO Council, scheduled international air service is a series of flights that possesses all the following characteristics:

1. It passes through the airspace over the territory of more than one State;
2. It is performed by aircraft for the transport of passengers, mail or cargo for remuneration, in such a manner that each flight is open to use by members of the public;
3. It operates to serve traffic between the same two or more points, either according to a published timetable; or,
4. With flights so regular or frequent that they constitute a recognisably systematic series.

In the ICAO Council's approach, all elements of this description are *cumulative*. Thus, non-scheduled services are flights that do not conform to this cumulative characterisation. Correspondingly, in this line of reasoning, a UA non-scheduled flight is the transport of passengers, cargo or mail for remuneration or hire, performed as other than scheduled air service.

The third element uses the phrase *non-traffic purposes*. Under Article 96 (d) of the Chicago Convention 1944, 'stop for non-traffic purposes' means a landing for any purpose other than taking on or discharging passengers, cargo or mail.[61] A situation with a stop for non-traffic purposes may involve a technical stop in which a UA, engaged in the carriage of cargo, lands with the intention to refuel, perform unanticipated indispensable maintenance or the result of emergency action.

The second paragraph of Article 5 provides that non-scheduled flights shall also:

> "...have the privilege of taking on or discharging passengers, cargo or mail, subject to the right of any State where such embarkation or discharge takes place to impose such regulations, conditions or limitations as it may consider desirable."

Although bilateral or multilateral Air Services Agreements include provisions for non-scheduled flights, the general practice of States has been to approve non-scheduled flights under national laws.[62] The expression

61 Article 96 d), *Stop for non-traffic purposes* means a landing for any purpose other than taking on or discharging passengers, cargo or mail.

62 "*Conference on the Economics of Airports and Air Navigation*", Determinants of the economic regulation of airports and air navigation services, Accessed April 8, 2019. https://www.icao.int/Meetings/ceans/Documents/Ceans_Wp_061_en.pdf

'to impose such regulations, conditions or limitations as it may consider desirable' may take the form of multiple types of laws, rules and regulations concerning the circumstances of each case.[63] For instance, the provision leaves to each State how it will determine the conditions unilaterally to permit non-scheduled operations in its territory, based on its national laws.[64] An effect of this portion of the provision is that States may regulate non-scheduled international flights at their discretion. Under a unilateral framework of non-scheduled international operations, a charterer and a UA carrier alike must follow the rules of both the State of Origin and the State of Destination.

Traditionally, those rules and conditions may take the form of, but are not limited to, economic ones. For instance, States may prevent non-scheduled operations if such operations jeopardise scheduled air services.[65] In order to assess the potential operation of non-scheduled flights, States take into consideration the following aspects, namely:

1. Allowing non-scheduled operations between points not served by scheduled air services usually referred to as 'off-route charters';
2. Not permitting non-scheduled operations which would harm scheduled air services, and;
3. Allowing types of non-scheduled operations such as tour charters, which include a ground package of services like hotels and land transport, along with air transport which will not endanger the economic viability of scheduled air services.[66]

In contrast, in a liberalised context, States may agree in their Air Services Agreements to equate non-scheduled flights with scheduled air services in terms of rights and market access and without the necessity of compliance with the national regulations of the destination Party. Moreover, the designated air carrier may choose either the charter rules of its own country or that of the other Party for the operation of its non-scheduled services.[67]

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63 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (*Doc 9587*). ICAO, August 15, 2016. https://www.icao.int/Meetings/a39/Documents/9587-PROVISIONAL%20VERSION.pdf.

64 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 108.

65 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (*Doc 9587*). ICAO, August 15, 2016. https://www.icao.int/Meetings/a39/Documents/9587-PROVISIONAL%20VERSION.pdf

66 *Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587)*. ICAO, August 15, 2016. https://www.icao.int/Meetings/a39/Documents/9587-PROVISIONAL%20VERSION.pdf

67 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (*Doc 9587*). ICAO, August 15, 2016. https://www.icao.int/Meetings/a39/Documents/9587-PROVISIONAL%20VERSION.pdf

The author considers that the expression 'to impose such regulations, conditions or limitations as it may consider desirable', found in the second paragraph of Article 5, is broad enough to claim that the rules can be of any kind based on the national interests of States, which are typically influenced as a matter of international relations and the basis of comity and reciprocity between nations. However, they may not go as far as taking away the freedom of the operation of non-scheduled flights under Article 5 and make that freedom an illusion. The ICAO Council recognised that the right of contracting States to impose regulations, conditions and limitations on the taking on or discharging of passengers, cargo or mail by commercial non-scheduled air transport is unqualified. That said, the ICAO Council has expressed the opinion that the right would not be exercised in such a manner as to render the operation of this important form of air transport impossible or non-effective.[68]

Also, bilateral and multilateral agreements that produce regulations for non-scheduled flights of UA are possible, even more under a scenario that a UA or group of UA may operate in the State of the Destination while being remotely piloted from the State of Origin. A more complex scenario would be if a UA engaged in a non-scheduled flight and the remote pilot station are both operated in the territory of a State other than the State of the Operator. These situations may require States to conclude agreements not only based on Article 5 but also to follow the mandate of Article 8 in dealing with a legal framework for such operations, and with a licence or permit allowing the process. This topic will be further developed in Chapter Five.

Non-scheduled flights will be more suitable because they have the greater flexibility necessary to open new markets, trigger the benefits of this revolutionary technology and tackle the obstacles involved in this endeavour. Therefore, in the emergence of the era of UAS, it will be more convenient for a UAS cargo carrier to establish a commercially viable all-cargo operation on a non-scheduled basis.

4.4.5 SCHEDULED AIR SERVICES

Under Article 6 of the Chicago Convention 1944, a UA requires special permission before it flies to another country under the modality of scheduled air services.

> Article 6: Scheduled air services
>
> "No scheduled international air service may be operated over or into the territory of a contracting State, except with the special permission or other authori-

68 See *Manual on the regulation of international air transport* (2004). Retrieved April 23, 2017, from http://www.icao.int/Meetings/atconf6/Documents/Doc%209626_en.pdf

sation of that State, and in accordance with the terms of such permission or authorisation."

Under ICAO 's definition of scheduled air services, as discussed above,[69] neither more nor fewer conditions would require work to accommodate the operation of UA in commercial air transport. Nevertheless, the performance characteristics of the UAS will be decisive so that they can meet the cumulative requirements for the operation of scheduled international air services. The series of flights executed by the UA in various operations such as agriculture, construction, photography, surveying, observation and patrol and aerial advertisement are not scheduled international air services, even if the UA satisfies the other components of the characterisation of scheduled air services.

The State of the UAS operator[70] engaged in the operation of scheduled international air services that is neither a party to the *International Air Services Transit Agreement* nor to the *International Air Transport Agreement* will have to and must seek permission from the other State to facilitate the UA flight over the territory of the other State to land for non-traffic purposes and exploit traffic rights for facilitating the UA services. The general practice of the authorisation described in Article 6 takes the form of Air Services Agreements that States conclude from time to time and fall under the umbrella of the norms of the VCLT, whether embodied in a single instrument or two or more related instruments. This situation means that the State of the Operator of the UA intending to facilitate scheduled flight operations to a foreign State must be a party to an agreement with such States, whether on a bilateral or a multilateral basis.

As discussed in section 3.2.3.3 of Chapter Three of this research, although Appendix 4 of Annex 2 on *Rules of the Air* to the Chicago Convention 1944 provides general regulations for the operations of UAS and the minimum requirements to request special authorisation, the request and issuance of special authorisation for the operation of UA under Article 8 of the Chicago Convention 1944 does not deal with traffic rights, as the authorisation points out safety-related aspects. Further, there is no evidence that States have concluded specific treaties for market access privileges using UA.

As the Chicago Convention 1944 provides no reference for how such agreements might take form, it might be more convenient to assess whether the current bilateral or multilateral aviation traffic rights agreements apply to

69 See section 4.4.4 on Non-Scheduled flights.

70 See definition of *State of the Operator* in Annex 6 on Operation of Aircraft to the Chicago Convention 1944: 'The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence'. See also section 4.5.4, below.

the operations of UAS. The author will analyse these aspects in the following sections.

4.4.6 CABOTAGE

4.4.6.1 THE PROVISIONS OF THE CHICAGO CONVENTION 1944

Albeit maritime navigation first used the term *cabotage*, in civil aviation terminology, cabotage refers to the carriage of air traffic between two points that are both within the territory of one State. Article 7 of the Chicago Convention 1944 permits cabotage by foreign aircraft, provided that the State in whose territory the foreign aircraft operates allows the operation.[71]

The provision proclaims the following regime:

> Article 7: Cabotage
>
> "Each contracting State shall have the right to refuse permission to the aircraft of other contracting States to take on in its territory passengers, mail and cargo carried for remuneration or hire and destined for another point within its territory. Each contracting State undertakes not to enter into any arrangements which specifically grant any such privilege on an exclusive basis to any other State or an airline of any other State, and not to obtain any such exclusive privilege from any other State."

Analysing this provision, the term *aircraft* in the first sentence also includes UA, because UA falls within the concept of aircraft. Therefore, Article 7 applies to foreign registered UA engaged or willing to engage in cabotage. A quick reading of Article 7, paragraph 1 suggests that a UA registered in country A is free to engage in cabotage in the territory of country B unless the latter refuses permission to do so.[72] Cabotage is permitted as long as the State where the UA will operate under such a legal regime allows it, regardless of its scheduled or non-scheduled flight operation.

Also, the second paragraph prohibits exclusiveness in the grant of cabotage privileges to other countries and their airlines and the receipt of such rights from any other State. This scenario proposes that the concession of cabotage freedoms is admissible by the Chicago Convention 1944, on the condition that in either case, all States enjoy the same privilege. This situation means, in Professor Pablo Mendes de Leon's view, that paragraph 2 of Article 7,

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71 Pablo Mendes de Leon. *Cabotage in Air Transport Regulation.* Dordrecht: Martinus Nijhoff, 1992, xxi.

72 Pablo Mendes de Leon. *Cabotage in Air Transport Regulation.* Dordrecht: Martinus Nijhoff, 1992, xxi.

> "...addresses itself to the situation where two or more contracting States wish to conclude an agreement, whether bilateral or multilateral, on cabotage rights. The said provision lays down conditions for such an agreement. It does hot say anything about the penalty the agreement does not meet the requirements of Article 7 (2), nor does it directly give any right, or claim, to any third State. From this point of view, Article 7(2) does not grant cabotage rights on a multilateral basis to all other contracting States of the Chicago Convention, the moment a contracting State grants cabotage right to another contracting State. This interpretation is supported by emphasising the word 'specifically'."

4.4.6.2 APPLICATIONS

To comply with the mandate of the last paragraph of the Preamble of the Chicago Convention 1944, which states that "international air transport services may be established by equality of opportunity and operated soundly and economically", States shall accelerate the relaxation of the cabotage regime.

The grant of cabotage privileges is rare. The closest aviation market of a cabotage-free zone is the EU, where the establishment of a joint air transport market between and within the twenty-eight EU member States necessitated dismantling the doctrine.[73]

Cabotage is also present in the Multilateral Air Services Agreement (MASA) concluded between the State members of the Caribbean Community (CARICOM). Under that agreement, there is no obligation for a contracting State to grant cabotage traffic rights to the carrier of another party; neither is there a prohibition to grant such rights.[74]

Chile is another example of free cabotage, as the Commercial Aviation Act of 1979 eradicated the legal reserve of cabotage. Chile reaffirmed this open unilateral cabotage policy in 2012 through a resolution issued by the Civil Aviation Board, in which the board declared free access of foreign companies to the domestic market without demanding reciprocal concession for Chilean operators.[75]

4.4.6.3 CONCLUDING REMARKS

The author believes that a more flexible granting system of cabotage rights will unlock not only the potential of UAS operations but, most importantly, will contribute positively to the future development of international civil aviation as a whole.

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73 Brian F. Havel and Gabriel Sanchez. *The principles and practice of international aviation law.* (Cambridge: Cambridge University Press, 2014), 52.

74 CARICOM Secretariat, Transport Policy – Caribbean Community (CARICOM), accessed May 9, 2019, https://caricom.org/transport-policy

75 *Opening Cabotage in Chile.* ICAO. Chile, June 29, 2016. https://www.icao.int/Meetings/a39/Documents/WP/wp_440_rev1_en.pdf.

4.5 THE APPLICATION OF THE INTERNATIONAL AIR SERVICES TRANSIT AGREEMENT, THE INTERNATIONAL AIR TRANSPORT AGREEMENT, FREEDOMS OF THE AIR AND BILATERAL/MULTILATERAL AIR TRANSPORT AGREEMENTS TO THE OPERATION OF UNMANNED AIRCRAFT SYSTEMS

4.5.1 AMBIT OF THIS SECTION

As per the analysis in previous sections of this study, there is no freedom of the air under the Chicago Convention 1944.[76] Since its inception, aviation has proven to be a dynamic activity, not only because of the technological innovations it has produced but also because of the legal innovations it has rendered. Despite this, it is still an activity full of operational restrictions and contradictions. For example, it is common in aeronautical terminology to refer to the freedoms of the air as 'air traffic rights'.

However, States agree on the exchange of such freedoms based on their national interests and their sovereignty right, despite being an essential component in the chain of the air transport process. To develop international air transport further, freedom in air mobility is essential.

At the Chicago Conference 1944, the United States proposed that airlines should have unrestricted operating rights on international air transportation, as dependence on commercial air carriers to satisfy the demand of consumers was preferable to economic regulation by government fiat.[77] In pursuit of this idea, the United States representatives to the Chicago Conference 1944 invited States participants to a multilateral negotiation to exchange freedoms of the air and insisted that determining capacities, frequencies and fares shall fall on market forces rather than delegating to an international regulatory body.[78]

These negotiations produced two treaties: the *International Air Services Transit Agreement* and the *International Air Transport Agreement*, which addresses operational and traffic rights, respectively. The analysis of subsequent sections will focus on the application of the *International Air Services Transit Agreement*, the *International Air Transport Agreement*, the freedoms of the air and the Bilateral/Multilateral Air Transport Agreements to the cross-border operations of UAS.

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76 See Article 1 on Sovereignty of the Chicago Convention 1944.

77 *International Civil Aviation Organization*. Expenditure by Agency | United Nations System Chief Executives Board for Coordination. Accessed December 04, 2018. https://www.unsystem.org/content/icao.

78 Betsy Gidwitz. *The Politics of International Air Transport*. Lexington, Mass.: Lexington Books, 1980), 49-50.

4.5.2 THE INTERNATIONAL AIR SERVICES TRANSIT AGREEMENT

At the Chicago Conference 1944, thirty-three States signed the *International Air Services Transit Agreement*, also known as the 'Two Freedoms Agreement,' and in this section also referred to as 'the treaty.' This treaty involves a multilateral exchange of transit rights, also known as operational rights or, in other words, the trade of the first two freedoms of the air, which the author will further analyse below. Under the *International Air Services Transit Agreement*, States Parties may have their commercial aircraft flying in scheduled international air services to pass over the territory of other signatories without landing or to make stops for non-traffic purposes.[79]

Article 1 provides the following:

> Section 1
> "Each contracting State grants to the other contracting States the following freedoms of the air in respect of scheduled international air services:
> *1.* The privilege to fly across its territory without landing; and
> *2.* The privilege to land for non-traffic purposes."
>
> The privileges of this section shall not be applicable with respect to airports utilised for military purposes to the exclusion of any scheduled international air services. In areas of active hostilities or of military occupation, and in time of war along the supply routes leading to such areas, the exercise of such privileges shall be subject to the approval of the competent military authorities.

The following elements characterise the *International Air Services Transit Agreement*, namely:

1. The treaty defines the first and second freedoms as *privileges* and not as *rights* because the principle of States' sovereignty over the airspace is *ubiquitous* since it applies not only to safety-related aspects but also to the economic interests of States, among others.[80] Therefore, it is not a right of other States to fly over the airspace of another State but is an exceptional privilege granted by the overflown State.
2. The two freedoms pertain only to aircraft engaged in *scheduled international air services*,[81] which under Article 96 of the Chicago Convention 1944 means any scheduled air service performed by aircraft for the public transport of passengers, mail or cargo that passes through the airspace over the territory of more than one State.[82]

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79 Martin Dresner and Michael W. Tretheway. *'ICAO and the Economic Regulation of International Air Transport*,, Annals of Air and Space Law 17, 1992, 195-216.

80 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 110.

81 See section 1 of Article 1 of the *International Air Services Transit Agreement*.

82 See Article 96 on definitions of the Chicago Convention 1944.

3. The two freedoms are essential for the operation of international air services as they represent the primary and elementary *proviso* to operate internationally under scheduled commercial flights.[83]
4. The two freedoms of the air are also tools, not only for national policy but also for international relations of States.[84]
5. In March 2019, 133 States are Parties to the *International Air Services Transit Agreement* a number equivalent to almost 70% of ICAO's membership.

Because the *International Air Services Transit Agreement* makes no exclusion to UA, its provisions, therefore, apply to UA when engaged in international air services.

However, the State of registry[85] of the UAS that is not a party to the *International Air Services Transit Agreement* shall seek permission for that UA to fly over foreign territories when engaged in *scheduled international air services*. Such permission may take the form of bilateral agreements with other States or, if there is no agreement between them, a State could grant such permission based on the principle of comity and reciprocity.[86]

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83 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 110.

84 Canada, with the second largest territory of the world and an active supporter of liberalised attitudes in international aviation, was an original party to the Agreement but denounced it on 12 November 1986. The cause was a commercial dispute with the United Kingdom which intended to curtail the rights and space of Air Canada at the Heathrow Airport and to relegate its operations to Gatwick, an airport without convenient connections for flights beyond the UK. Since the involved States could not solve dispute by direct diplomatic negotiations, Canada resorted to the denunciation of the International Air Services Transit Agreement that would have deprived the UK carriers of the privilege to overfly vast territories of Canada on their flights to such destinations as Boston, New York, Chicago, San Francisco, Los Angeles, Anchorage, and many others. The UK authorities, therefore, offered satisfactory accommodation for Air Canada at Heathrow and Canada continues to offer to the UK and any other State the freedoms of the air on a bilateral reciprocal basis. This situation illustrates how the freedoms of the air can play a tactical role in the mutual relations of States.

85 See the definition of *State of Registry* in Annex 6 on Operation of Aircraft to the Chicago Convention 1944: 'The State on whose register the aircraft is entered'.

86 In the Manual on the Regulation of International Air Transport, ICAO provides the following definitions: *Comity* is due deference given by the authorities of one State to the official acts of another State. Comity underlies the unilateral grant of a right or benefit to a foreign airline with no necessary expectation of the same treatment by that airline's State in similar circumstances. For example, based on comity, a State may approve reduced fares or rates which a foreign government has ordered its national airline to provide to its officials. In contrast, *reciprocity* is the granting of a right or benefit by a State to a foreign entity such as an air carrier when it has no international obligation to do so, on the condition that the same treatment will be accorded to its comparable entity (entities) by the home State of that foreign entity. For example, a State might approve a non-scheduled flight or flights by a foreign airline if that foreign airline's State has in the past approved, or promises to approve, a non-scheduled flight or flights for the first State's airline.

Moreover, the *International Air Services Transit Agreement* also provides the following:

1. A contracting State may designate the route to be followed within its territory by any UA engaged in international air services and the airports which any such service may use;[87] and,
2. A State may withhold or revoke a certificate to an air carrier of another State if it does not show that the substantial ownership and effective control is in the hands of the nationals of a contracting State, or the air transport enterprise does not comply with the laws of the State over which it operates, or to perform its obligations under the *International Air Services Transit Agreement*.[88]

Per section 5 of Article 1 of the *International Air Services Transit Agreement*, the 'substantially owned and effectively controlled' rule, also called the *nationality rule* by aviation lawyers,[89] create restrictions on the air carriers designated by a State in non-compliance of such provision when engaged in international air services. Under the current globalised context of the aviation industry, we may find scenarios in which a UAS carrier will be incorporated in State A while substantially owned and effectively controlled by nationals of State B. It is yet unclear whether this scenario may cause States to rethink or adopt a different approach to the nationality clause: that is, whether the principal place of business where the designated air carriers, are legally incorporated under the laws of the designating State and where it should have its domicile and effective headquarters[90] will suffice.

4.5.3 THE INTERNATIONAL AIR TRANSPORT AGREEMENT

The *International Air Transport Agreement*, also known as the 'Five Freedoms Agreement', includes two transit rights and three additional freedoms, also

87 See section 4 of Article 1 of the *International Air Services Transit Agreement.*

88 See section 5 of Article 1 of the *International Air Services Transit Agreement.*

89 Brian F. Havel and Gabriel S. Sanchez. *The Principles and Practice of International Aviation Law* (Cambridge: Cambridge University Press, 2014), 69.

90 See Article 12 of the '*Comunidad Andina*' – Decision 582. The Cartagena Agreement of 1969 gave birth to the Andean integration process by creating the 'Andean Community', formerly known as Andean Pact. The agreement was initially entered into by Colombia, Bolivia, Ecuador, Peru, and Venezuela. The objective of the agreement was to strengthen the unity among those governments, promoting the balanced and harmonic development of such member states through social and economic integration aiming to the gradual integration of a common Latin-American market. The agreement was also intended to improve the geographical position as a block, thus reducing the Andean vulnerability within the international economic context. In March 2019, Colombia, Peru, Bolivia and Ecuador are the four state members of the Andean Community of Nations. Argentina, Brazil, Chile, Paraguay, and Uruguay are associate members, and as of 2006, Venezuela is no longer a member of the community.

called *traffic rights*.[91] The *International Air Transport Agreement* exchanges the five freedoms of the air among the contracting Parties for the benefit of the carriers qualified under this agreement to enjoy the freedoms of the air stipulated in the *Five Freedoms Agreement*. It defines the third, four and five freedoms by reference to the State of registration of the aircraft. Further, the fifth freedom granted is not the right to carry general third-country traffic, but third-contracting State traffic.[92]

Article 1 states the following:

> Article 1, Section 1
>
> "Each contracting State grants to the other contracting States the following freedoms of the air in respect of scheduled international air services:
> 1. The privilege to fly across its territory without landing;
> 2. The privilege to land for non-traffic purposes;
> 3. The privilege to put down passengers, mail and cargo taken on in the territory of the State whose nationality the aircraft possesses;
> 4. The privilege to take on passengers, mail and cargo destined for the territory of the State whose nationality the aircraft possesses;
> 5. The privilege to take on passengers, mail and cargo destined for the territory of any other contracting State and the privilege to put down passengers, mail and cargo coming from any such territory.
>
> With respect to the privileges specified under paragraphs 3, 4 and 5 of this section, the undertaking of each contracting State relates only to through services on a route constituting a reasonably direct line out from and back to the homeland of the State whose nationality the aircraft possesses.
> The privileges of this section shall not be applicable with respect to airports utilised for military purposes to the exclusion of any scheduled international air services. In areas of active hostilities or of military occupation, and in time of war along the supply routes leading to such areas, the exercise of such privileges shall be subject to the approval of the competent military authorities."

Before applying the nine freedoms of the air to UA operated by undertakings, the *International Air Transport Agreement*, when addressing freedoms three to five, relies on the nationality or registration of aircraft.[93] Nevertheless, most ASAs, when dealing with the freedoms of the air, refer to the *airline nationality* based on the ownership and control rule and few agreements

91 Brian F. Havel and Gabriel S. Sanchez. *The Principles and Practice of International Aviation Law* (Cambridge: Cambridge University Press, 201478-79.

92 Bin Cheng. *The Law of International Air Transport* (London: Stevens and Sons, 1984), 303.

93 See Article 1, Section 1 (second paragraph) of the *International Air Services Transport Agreement:* 'With respect to the privileges specified under paragraphs 3, 4 and 5 of this section, the undertaking of each contracting State relates only to through services on a route constituting a reasonably direct line out from and back to the homeland of the State whose nationality the aircraft possesses.

based on the principal place of business of the airlines of the designating State.[94]

Even though the Five Freedoms Agreement was a ground-breaking contribution in pioneering the definitions of the freedoms of the air, it proved to be of little significance since only eleven States ratified the Agreement, namely, Bolivia, Burundi, Costa Rica, El Salvador, Ethiopia, Greece, Honduras, Liberia, The Netherlands, Paraguay and Turkey.[95]

Because the *International Air Transport Agreement* is not in force, it has no economic, legal or air policy relevance for either manned or unmanned flights. For this reason, it is unnecessary for this research to further develop its study and potential application for international air transport by UA. Instead, the author will analyse the bilateral Air Services Agreements with special reference to the operation of traffic rights as expressed in the freedoms of the air (see the next section) and how such Air Services Agreements, including traffic rights, may apply to the operations of UA engaged in international commercial flights. Notwithstanding, the author acknowledges that the definitions of traffic rights contained in the *International Air Transport Agreement* could serve as building blocks to redefine the freedoms of the air that take into consideration the scenarios in which UAS could develop in the future and that the author identifies in the following section of this study.

4.5.4 FREEDOMS OF THE AIR IN RELATION TO THE OPERATION OF UNMANNED AIRCRAFT SYSTEMS

There are nine freedoms of the air, which can be classified into operational and traffic rights. The first two freedoms of the air are operational rights relating to the privileges for technical operations, laid down in the *International Air Services Transit Agreement.* Under these freedoms, aircraft can fly over or make a technical landing in the territory of another State. Freedoms three to nine pertain to the commercial operation of air services or traffic rights. However, the *International Air Transport Agreement* only lays down the freedoms of the air from three to five, whereas freedoms six to nine are regulated under Bilateral Air Services Agreements, from now on simply referred as 'ASA' or 'ASAs' between States.[96]

94 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 106.

95 See '*International Air Transport Agreement Signed at Chicago on 7 December 1944.*' Accessed December 8, 2018. https://www.icao.int/secretariat/legal/List%20of%20Parties/Transport_EN.pdf

96 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. (Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 58-60.

The author has made an effort to adapt the freedoms of the air to the operations carried out by UA, in which context he submits the following:

- The author has chosen the word *undertaking* instead of *airline* to broaden the scope of commercial opportunities: not only airlines but also other undertakings may wish to operate UAS on cross-border flights involving the application of the freedoms of the air;
- Such undertakings must be licensed, under national law, to operate UAS, in particular, the conditions laid down in the Aviation Act or Laws of the licensing State;
- Licensing conditions pertain to safety,[97] liability, insurance, supervision of the management, and incorporation of the undertaking following national rules and other conditions;
- To align the author's proposals by substituting *airline* with *undertaking*, he has chosen the principal place of business of the undertaking, also called the *place of incorporation* of the undertaking as the link with the licensing State, because this choice is generally adequate for undertakings, and builds on the principal place of business concept of ICAO for safety oversight reasons.[98]

The freedoms of the air, as adapted to UAS operations, would then be formulated as follows:

First Freedom: The right of an undertaking operating UA to fly across a foreign territory without landing.[99] For instance, a UA engaged in civil functions of one State may fly over the airspace of another State without landing, provided the overflown State allows it.

Second Freedom: The right of an undertaking operating UA to land in foreign territory for non-traffic purposes.[100] For instance, a civil UA of one State may land in another State for technical reasons, such as refuelling or maintenance, offering no commercial service to or from that point.

Third Freedom: The right of an undertaking operating UA to carry traffic from the territory of the State where the undertaking has its principal place

97 See Chapter Five, dealing with the applicability of international safety and security standards of ICAO, as implemented in national safety regulations, supplemented with domestic safety standards.

98 See definition of the State of the Operator in Chapter 1 of ICAO Annex 19 on Safety Management, and Art. 83*bis* of the Chicago Convention.

99 Pablo Mendes de Leon. *Introduction to Air Law.* 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

100 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

of business.[101] For instance, an undertaking operating UA may carry traffic from its State of incorporation to another State.

Fourth Freedom: The right of an undertaking operating UA to carry traffic from the territory of another State into the territory of the State on whose territory undertaking operating UA has its principal place of business.[102] For instance, an undertaking operating UA may carry traffic from another State to the State of incorporation of the undertaking.

Fifth Freedom: The right of an undertaking operating UA to carry traffic from one point in a foreign territory into a point in another foreign territory and *vice versa*, which is linked with the third and fourth freedom traffic rights.[103] For instance, an undertaking operating UA engaged in scheduled international air services may carry traffic between two States outside the State of incorporation of the undertaking so long as the flight originates or ends in the State of incorporation of the undertaking.

Sixth Freedom: The right of an undertaking operating UA to carry traffic from one point in a foreign territory into a point in another territory via the State of incorporation of the undertaking operating UA.[104] For instance, an undertaking operating UA may carry traffic between two States via the State of incorporation of the undertaking. Sixth freedom is also a combination of third and fourth freedoms secured by the said State of incorporation.

Seventh Freedom: The right of an undertaking operating UA to carry traffic from one point in a foreign territory into a point in another foreign territory and *vice versa*, which carriage is not linked with a third and fourth freedom traffic right, respectively.[105] For instance, an undertaking operating UA operating the UA outside its State of incorporation, may fly into another State and discharge or take on traffic, coming from or destined to, a third State. Cargo carriers widely use the seventh freedom of the air because it provides the flexibility necessary to move cargo worldwide and make the aviation cargo model business more attractive.[106]

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101 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

102 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

103 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

104 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 61.

105 Pablo Mendes de Leon. *Introduction to Air Law*. 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 62.

106 *"The Impact of International Air Service Liberalisation on Chile."* Agenda for Freedom. IATA, July 2009. https://www.iata.org/publications/economics/reports/chile-report.pdf

Eighth Freedom: The right of an undertaking operating UA to carry traffic between two points in a foreign territory, where carriage is linked with the fourth freedom carriage.[107] For instance, an undertaking operating UA may move traffic from one point in the territory of a State to another point in the same State on a flight that originates in the undertaking's State of incorporation. This right is also known as *consecutive cabotage*.

Ninth Freedom: The right of an undertaking operating UA to carry traffic between two points in foreign territory, which carriage is not linked with a third or fourth freedom carriage.[108] For instance, an undertaking operating UA may carry traffic from one point in the territory of a State to another point in the same State. This freedom is also known as *standalone cabotage*.

The author forecasts it is likely that in the future, undertakings operating UA may have their principal place of business in one State but for operational or commercial reasons may concentrate the remote pilot stations that control UA in another State. For instance, an undertaking, such as FedEx, may have its principal place of business in State A because it is convenient for commercial purposes, while the operations centre for its UA is in State B where the UA is controlled, and the UA performs a non-scheduled air service moving cargo between States C and D. Alternatively, the UA may fly from its operations centre in State A, moving passengers and mail to State C, while the undertaking's principal place of business is in State B. Myriad alternatives are possible.

Under these futuristic scenarios, the location of the remote station that controls the UA is a component that must be taken into consideration when applying, or perhaps defining, new freedoms of the air, since the flight may originate from one point but be operated in another. Before arriving at that stage, it is necessary first to solve safety-related aspects of the air navigation of UA that facilitate their integration into international civil aviation, as further discussed in Chapter Five.

Finally, undertakings operating UAS face an additional peculiarity when applying the freedoms of the air. There is no legal freedom of air mobility because of its pilotless condition, and although UA could be operated on scheduled or non-scheduled flights, as previously discussed, the undertakings must have a special authorisation from the State overflown under Article 8 of the Chicago Convention 1944.[109]

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107 Pablo Mendes de Leon. *Introduction to Air Law.* 10th ed. Alphen Aan Den Rijn, the Netherlands: Wolters Kluwer, 2017), 62.

108 Pablo Mendes de Leon. *Introduction to Air Law.* 10th ed. (Alphen Aan Den Rijn, The Netherlands: Wolters Kluwer, 2017), 62.

109 See section 4.4.3.2 of this research.

4.5.5 BILATERAL/MULTILATERAL AIR SERVICES AGREEMENTS

4.4.5.1 THE ESTABLISHMENT OF AIR SERVICES AGREEMENTS

The freedoms of the air do not cease to be a tool for developing scheduled international aviation. The lack of ratification of more States to the *International Air Transport Agreement* did not impede the use of these traffic rights. Today, States have included the freedoms of the air in bilateral and multilateral ASAs.[110] This situation gives States enough flexibility to decide, on a case-by-case basis, how open they can be in the exchange of traffic rights based on their national economic interests and priorities in their foreign policy.

Under Article 6 of Chicago Convention 1944, special permission is necessary before a UA engages in international air services.[111] Traditionally, and as postulated above, States grant these authorisations through bilateral or multilateral ASAs, which are required to be registered with the ICAO Council under Article 83 of the Chicago Convention 1944.[112]

ASAs are international trade agreements concluded between sovereign States and subject to VCLT rules,[113] in which the involved Parties agree to establish rules for airlines performing commercial air services between their territories and beyond.[114] Arrangements regarding air transport may also take the form of a Memorandum of Understanding (MOU), which may appear to be less formal but is convenient as a temporary means of exchange of traffic rights until the ASA completes the process of the internal ratification of States. Other forms include executive agreements, conventions, protocols, exchanges of diplomatic notes or even *ad hoc* permissions.[115]

ASAs remain the primary means to enable scheduled international air services.[116] ICAO has registered thousands of ASAs, including the adoption

110 For instance, the Multilateral Agreement on the Liberalization of International Air Transportation (MALIAT), also known as the Kona 'Open-Skies Agreement', was concluded in 2000 by five like-minded members of the Asia-Pacific Economic Cooperation (APEC): Brunei, Chile, New Zealand, Singapore and the United States. MALIAT entered into force in the following year and was subsequently joined by Peru (withdrew in 2005), Samoa, Tonga, Cook Islands and Mongolia.

111 See Article 6 on scheduled air services of the Chicago Convention 1944.

112 See Article 83 on registration of new arrangements of the Chicago Convention 1944.

113 See Article 2 on Use of Terms of the Vienna Convention on the Law of Treaties

114 See *"ICAO Template Air Services Agreements."* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

115 See Article 11 on Means of expressing consent to be bound by a treaty of the Vienna Convention on the Law of Treaties.

116 *Overview of Regulatory and Industry Developments in International Air Transport.* September 2016. Accessed December 13, 2018. https://www.icao.int/Meetings/a39/Documents Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf.

of amendments and MOUs.[117] Most of these agreements and amendments contain nationality requirements for designated airlines; transit and traffic rights; the free determination of capacity; single, dual or multiple designations with or without route limitations; and a pricing regime.[118]

A typical ASA comprises a preamble, articles, signatures, annexes, attachments and amendments. Because aviation is also a tool of foreign policy for States, comity and reciprocity may also form the foundation of aviation relations between the signatory States of ASAs.

4.4.5.2 ICAO'S TEMPLATE OF AIR SERVICES AGREEMENTS

ICAO has developed a Template of Air Services Agreements for optional use by States, referred hereinafter as TASAs. The source of the language in TASA is the practice and usage of States in their ASAs.

The author believes that TASA is a fruitful source of analysis to determine whether the ASAs adopted by the States can apply to the operations of UAS, as TASAs and ASAs contain certain patterns and similar structures common to them, namely:

The Preamble presents the purpose of agreeing and reveals the aims that the Parties will follow.

Definitions in an ASA may produce many terms used across the agreement, for clear understanding and application of the Parties. Nothing in a typical definition of 'international air transportation' excludes UA, as they are aircraft. However, the author considers, for legal certainty purposes, it would be convenient to incorporate the terms RPA and RPAS in the definition clause, as they are new entrants to civil aviation and soon, due to current technological development, RPA as a subcategory of UA will be capable of regular performance of international air transport services.

The *Grant of Rights* provision sets out the traffic and non-traffic rights that Parties to the agreement grant to each other. Usually, the schedule or annexes to the agreement complement this provision and insert the routes,

117 The ICAO World Air Services Agreements (WASA) on-line database is continuously updated and in 2016, included 2,743 agreements and arrangements from 197 States, multilateral organizations and past entities, as well as over 1,000 amendments. Of these agreements, 184 are fully liberalized, 383 are dubbed 'transitional' and 2,176 are traditional agreements.

118 *Overview of Regulatory and Industry Developments in International Air Transport*. September 2016. Accessed December 13, 2018. https://www.icao.int/Meetings/a39/Documents Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf.

rights and any applicable conditions agreed by the Parties.[119] Typically, this provision also includes the first two freedoms of the air, although included in the *International Air Services Transit Agreement*, because some States may not be, or may cease to be, Parties to the referred treaty. This provision also exchanges other traffic rights based on the route schedule. ASAs may also incorporate the phrase *separately or in combination*, which is optional because its insertion would enable the operation of all-cargo services. However, these services could also be the subject of separate treatment and negotiation between the Parties.[120]

The language utilised in a typical provision of *Grant of Rights* does not jeopardise the use of UA in international air transportation because, regardless of the location of the remote pilot station that controls it, the UA is the component that will overfly, stop, pick up or leave passengers, cargo and mail in a State other than the State of incorporation of the undertaking operating UAS, the State of Nationality of the persons who own and control the undertaking or the principal place of business of the undertaking. Therefore, the Grant of Rights provision may be made to apply to UAS.[121]

The *Designation and Authorisation* provision addresses the consent of the Parties to designate a single carrier, two carriers each, or multiple undertakings incorporated in the designating State to perform international air transportation based on the rights exchanged. This provision also addresses circumstances for the revocation of the designation or suspension of the operating authorisation of the designated undertakings.[122]

Most ASAs still use the traditional '*substantial ownership and effective control*' formula, in which the authorising Party is the sole judge of whether the undertakings meet the ownership and control criteria. However, in the case of cross-border UAS operations, these nationality requirements may be substituted with the designation of an undertaking that has its principal place of business in the designating State. For example, in a Canada/US case, a hypothetical case might address DDC's ownership shift change through a cross-border merger or acquisition with China's undertaking Ehang, but the United States could, under the nationality clause of the ASA, reduce or suspend DDC's market access privileges unless the relevant ASA is based

119 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

120 See '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

121 See '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

122 See '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

on the place of incorporation of the undertaking to be designated.[123] If the new stake of Ehang represents only twenty-five percent of shares, this outcome would not be a problem. However, if the stockholding is higher than fifty percent, then Ehang would substantially own DDC. Most ASAs do not provide a clarification or explanation on what *substantial ownership and effectively controlled* should mean.

In relation to the traditional nationality requirements for airlines, Professor Brian Havel holds that the understanding of the concept of effective control could be even more ambiguous. For instance:

> "...whereas twenty-five percent of an airline's voting share capital may not by itself reflect 'substantial ownership', if twenty-five percent represents the single largest fraction of the capital, spreading the remaining seventy-five percent among the diluted mass of shareholders may not prevent the twenty-five percent owner from exercising effective control. The imprecision of the nationality rule's two key components gives States ample latitude to enforce or (in a growing number of cases) not enforce the rule against their ASA partners."[124]

States take varying views in their domestic legislation or practice as to what might make up *effectively controlled*.[125] For instance, there have been individual instances where the authorising Party has waived its right to require the compliance of the ownership and control criteria[126] as they have no restrictions on foreign investments because a foreign national can own up to one hundred percent of the shares of a local air carrier.[127]

To overcome the nationality rule that might be restrictive in a globalized economy and perhaps inconsistent as a means to develop international civil aviation, ICAO's TASA recommends the formula of the *principal place of business* because it would enable a State to designate air carriers as it sees qualified, including those with majority national ownership to use and enjoy market access rights under the ASA. It would also support the obligation by the designating Party to provide regulatory control over the undertaking it designates through licensing, which may comprise both

123 *Drone Delivery Canada* is a pioneering technology firm based out of Toronto, Ontario, Canada, with a focus on designing, developing and implementing a commercially viable drone delivery system within the Canadian geography. Founded in 2014 in Guangzhou, China, *EHANG* is an intelligent aerial vehicles technology & service company.

124 Brian F. Havel and Gabriel S. Sanchez. *The Principles and Practice of International Aviation Law* (New York: Cambridge University Press, 2014), 126.

125 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

126 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

127 For instance, under Ecuador's foreign investment policy 100% of foreign investment is permitted. Most of Ecuador's ASA do not recourse to the nationality clause.

economic and technical elements, such as safety and security.[128] This is one of the reasons why the author adopted the criterion of the principal place of business as the legal link between the licensing State and the undertaking operating UAS (see section 4.5.4).

The designation and authorisation provision is crucial because it will not only ensure that an undertaking operating UA in international air transportation complies with the nationality clause about its principal place of business but also complies with safety and security aspects particular to unmanned flight. In the future, however, as noted in section 4.5.4, an undertaking operating UAS may have a principal place of business in State A, whereas the principal place of operation from where it operates the fleet to UA through the remote pilot station is located in State B. These different locations may represent additional legal challenges, such as jurisdiction over UAS and safety- and security-related aspects, among others, as State B will be part of the chain process of international air transportation.

The provision on *Application of Laws* is present in most ASAs and reproduces the substance of Article 11 on the applicability of air regulations of the Chicago Convention 1944. Under this provision, States commit not only to using ICAO's SARPs concerning facilitation but also the provision with emphasis on compliance by undertakings with a Party's laws on operation and navigation of aircraft and the admission, transit and departure of passengers, crew, cargo and mail. It also addresses compliance with the laws and regulations related to customs, immigration, currency, health and quarantine of the other Party.[129] Further explanations on this subject will be provided in Chapter Five.

UA may fit perfectly in this provision because, like any other aircraft engaged in international air transport, it will be subject to the compliance with laws and regulations of the destination State because it will have to

128 '*ICAO Template Air Services Agreements.* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

129 '*ICAO Template Air Services Agreement*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf. Application of Laws: 1. While entering, within, or leaving the territory of one Party, its laws and regulations relating to the operation and navigation of aircraft shall be complied with by the other Party's airlines. 2. The laws and regulations of one Party relating to the entry into, stay in and departure from its territory of passengers, crew and cargo including mail such as those regarding immigration, customs, currency and health and quarantine shall apply to passengers, crew, cargo and mail carried by the aircraft of the designated airline of the other Party while they are within the said territory. Neither Party shall give preference to its own or any other airline over a designated airline of the other Party engaged in similar international air transportation in the application of its immigration, customs, quarantine and similar regulations.

follow the rules related to customs, immigration, currency, health and quarantine of the other Party.[130]

The provision of *Recognition of Certificates* is typical in almost every ASA, even though it carries the essence of Article 32 b) on licences of personnel and Article 33 on recognition of certificates and licences of the Chicago Convention 1944. Under this provision, the Parties exchange mutual recognition of certificates of airworthiness and competency and licences issued by the other Party. States may reserve the right to refuse to recognise any certificates or licences issued by the other Party to the first Party's nationals.[131] Again, this subject will be addressed in Chapter Five.

Even though Article 33 could apply to certificates of airworthiness for UA, also discussed in Chapter Five, ICAO believes that the licences of remote pilots are not subject to this Article, since Article 32 does not encompass remote pilot licences, which apply specifically to those individuals who are conducting their duties while on board the aircraft.[132] The reason for this conclusion is that the State of the location of the remote pilot station should issue the licences of the remote pilots, as this situation will facilitate the oversight of the remote pilot by the licensing authority.[133] For instance, a UA may fly from State A to State B while being controlled by a remote pilot station in State C. In this situation, the concurrence of the licensing State of the remote pilot will be necessary, which shall be recognised not only in the State where the UA operates but also by the State of registry of the UAS. Parties to an ASA may need to rethink this provision, in the sense of facilitating the recognition of licences of remote pilots located in a third State.

ICAO's TASA proposes a provision to address safety concerns to ensure that aircraft operating in the other Party's territory follow ICAO's SARPs (see Chapter Five). The provision takes a comprehensive view of an aircraft operation by including aeronautical facilities, such as ATC, airport and navigational aids, the aircraft and its crew. Nevertheless, in a futuristic scenario, Parties to an ASA may consider inserting additional or more restrictive rules they may deem necessary to assess the safety of UAS operations. UA will have to engage in international air transportation without negatively affecting the safety of manned aviation. If this is unachievable, the UA may

130 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

131 See Articles 32 on *Licenses of Personnel* and 33 on *Recognition of Certificates and Licenses* of the Chicago Convention 1944.

132 See ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015), 1-7.

133 See ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal, Canada: International Civil Aviation Organization, 2015, 1-7.

operate under specific conditions or areas, namely segregated airspace or away from densely populated areas.[134]

ICAO's provision on security incorporates obligations arising from international instruments on unlawful interference to which the Parties may be signatories, and to Annex 17 on Aviation Security of the Chicago Convention 1944. Any changes to the SARPs that may come into effect after the adoption of the ASA would also apply to the Parties. The provision also emphasises cooperation to prevent an unlawful seizure or other such acts, requests for extraordinary security measures and whenever there is an unlawful act or the threat of one. The provision does not limit the freedom of Parties to expand or limit the scope of the provision.[135] For instance, the physical security of a remote pilot station may be necessary to ensure the safeguarding of the remote pilot station against unlawful interference during flight.[136] This scenario may require the involvement of a third Party if the remote pilot station operates in a third State. Physical security of UA while on the ground will be necessary to ensure the safeguarding of UA against unlawful interference. Security measures, like the C2 link and other technical procedures, may be essential to protect the C2 link against unlawful or unintentional interference.[137] Security is therefore critical for UA engaged in international air transportation with features that are comparable to manned aircraft, but also unique to unmanned flight.

The provision on *fair competition* of the TASA incorporates much of the policy guidance developed by ICAO over the years, which also follows the spirit of Article 44 f) on objectives of the Chicago Convention 1944 that refers to every contracting State having "a fair opportunity to operate international air services".[138] Nevertheless, liberal ASAs have replaced the traditional language of ensuring "fair and equal opportunity...to operate" with "fair and equal opportunity...to compete". Of the registered ASAs at ICAO, 888 have competition clauses referring to the traditional *operate* approach, whereas 244 ASAs hold that air carriers possess the right to fair

134 See Article 8 on 'Safety' and '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

135 *ICAO Template Air Services Agreements'.* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

136 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal: International Civil Aviation Organization, 2015), 9-13.

137 ICAO Doc 10019 AN/507, *Manual on Remotely Piloted Aircraft Systems* (*RPAS*), Montreal: International Civil Aviation Organization, 2015, 9-13.

138 *Overview of Regulatory and Industry Development in International Air Transport.* ICAO Secretariat, September 2016. https://www.icao.int/Meetings/a39/Documents Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf

and equal opportunities to *compete* in the provision of air services and 225 contain an additional reference regarding unfair competition practices.[139]

UA will compete with manned aircraft in international air transportation in the future. Also, UAS will likely be cheaper to operate than manned aircraft. Under the fair competition provision, each designated undertaking shall have a fair opportunity to compete the routes specified in the ASA, regardless of the aircraft they operate. States' Parties to the ASA should take into consideration that fair competition is an essential general principle in the operation of international air services, regardless of the manned or unmanned condition.[140] ICAO should develop tools, such as an exchange forum, to enhance cooperation, dialogue and exchange of information between the member States to promote more compatible regulatory approaches to fair competition for international air transport using UA. As a result, market forces will determine the predominance of manned aircraft or UA based on clear rules for fair competition.[141]

ICAO developed the model clauses for capacity predetermination in the early 1980s.[142] Under the traditional provision of capacity predetermination, each designated airline may offer capacity based on the predetermination agreed by the Parties in advance, regarding the total capacity on each route. The requirement for mutual government agreement ensures that a Party can require that the designated airlines of both Parties offer the same amount of capacity on all routes and that both governments must agree on any change. Another option is that each designated airline can determine capacity individually, motivated by qualitative criteria and subject to *ex post facto* review by the Parties, but subject to the compliance of competition laws[143].

Nowadays, Open Skies agreements provide that the Parties should abrogate their direct bilateral control of capacity while retaining the ability to apply non-discriminatory, multilateral controls consistent with the ASA.[144] Under this free determination method, all forms of discrimination or unfair

139 *Overview of Regulatory and Industry Development in International Air Transport.* ICAO Secretariat, September 2016. https://www.icao.int/Meetings/a39/Documents Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf

140 *"ICAO Template Air Services Agreements."* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

141 *Overview of Regulatory and Industry Development in International Air Transport.* ICAO Secretariat, September 2016. https://www.icao.int/Meetings/a39/Documents Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf

142 *'ICAO Template Air Services Agreements."* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

143 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

144 *'ICAO Template Air Services Agreements'.* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

competitive practices, including predatory pricing, are cause for consultations between the States and possibly remedies to be imposed by the other State.[145] UAS may be subject to the three types of model clauses. However, it will depend on the trade and economic interests of the Parties involved to agree on the capacity of the routes operated by UA based on predetermination, transitional or full liberalisation.[146]

Traditional ASAs include provisions on *change of gauge*, defined as the operation of one of the agreed services by a designated airline in such a way that one section of the route is flown by aircraft different in capacity from those used on another section. Change of gauge is subject to several conditions, including scheduling coordination, size of aircraft and volume of traffic and capacity limitations. UA may benefit from this provision as UA might come in different sizes and models and, if, for economic interest, the air carrier may use a different aircraft on a portion of the route.[147]

The regulation of *pricing* is one of the most sensitive aspects, and most cases used to require double approval, which is the consent of both Parties to the agreement.[148] Other alternatives may determine the pricing based on the country of origin.

Apart from *hard rights*, such as traffic rights, traditional ASAs also include *soft rights*. Soft rights allow the establishment of offices in the partner country, hiring own staff, tickets sales, own ground handling opportunities, computer reservation systems and availability of slots at airports.[149] The actual economic conditions under which undertakings will operate UAS will dictate how and to what extent these provisions will apply to them.

Other typical clauses may deal with taxation, charges by airports and air navigation facilities, settlement of differences, entry into force of the agreement, termination of the agreement, determination of the authentic language and date and place of signatures. Much of the substance of ASAs is a matter of government policy on economics.[150]

145 Doc 9587 *Policy and Guidance Material on the Economic Regulation of International Air Transport* (Montreal: ICAO, 2008).

146 '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

147 *'ICAO Template Air Services Agreements."* Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

148 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 120.

149 '*ICAO Template Air Services Agreements*'. Accessed December 14, 2018. https://www.icao.int/Meetings/AMC/MA/ICAN2009/templateairservicesagreements.pdf

150 Michael Milde. *International Air Law and ICAO* (The Hague: Eleven International Publishing, 2016), 120-121.

4.4.5.3 CONCLUDING REMARKS

Like manned commercial aviation, ASAs can be a suitable means to facilitate the international air transport of UA. As in the analysis above, almost all provisions of TASA may apply to international air transport serviced by UA. The conditions under which UAS will operate will make the Parties to the ASA amend provisions that will not lose their essence but will address specific aspects that will characterise the international air transport of UA.

This conclusion is not final. Aviation has proven to be a dynamic activity, and there will be scenarios in which UAS will find that this study has not identified. However, economic regulation for the international air transport of manned aviation, which has evolved over the years to address the challenges of the activity, is the benchmark for the future development of economic regulations of international air transport using UA.

4.6 CONCLUSIONS

The Chicago Convention 1944 institutes two legal regimes for the international operations of aircraft, which also apply to the operations of UAS when flying over foreign airspaces, namely:

1. International air navigation; and,
2. International air transport.

International air navigation is governed by the Chicago Convention 1944 whereas international air transport is governed by the Chicago Convention 1944, the *International Air Services Transit Agreement* and the ASAs. These legal regimes are not mutually exclusive.

Article 8 of the Chicago Convention 1944 applies to the operations of UA. Therefore, any aircraft which is intended to be flown without a pilot on board is considered a UA, per ICAO's definition. This definition covers a broad range of aircraft types and is also divided into subcategories of other aircraft such as RPAS, which is ICAO's current regulatory scope of work.

The principle of *lex specialis* refers to the functioning of the law. It denotes the case where the law determines that a certain right or obligation is valid only regarding a limited subject matter or a limited set of legal subjects. Because Article 8 is *lex specialis* in relation to Articles 5, 6 and 7 of the Chicago Convention 1944, any aircraft under the category of pilotless aircraft shall receive prior authorisation regardless of the international air transport operation it engages, whether non-scheduled flight, scheduled air services or cabotage.

Also, the UA shall not endanger civil aircraft and must operate following the conditions of the authorisation while complying with the performance and equipment requirements for the specific airspace in which it will operate.[151]

Nothing in the legal content of the *International Air Services Transit Agreement* and the ICAO TASAs impedes their application to the operations of UA engaged in international air transport. However, provided that ICAO's SARPs for the international air navigation of UA are complete, in order to fine-tune the particular nature of UA when engaged in international air transport, certain provisions of the TASA may require adjustment or may need to incorporate new provisions to cover additional scenarios addressed in the previous sections that describe situations in which UAS may be involved.

Although the Chicago Convention 1944 aims to be a tool for cooperation among nations and to develop international civil aviation in an orderly and safe manner,[152] all this will only be possible if States consent to allow international air transport over their airspaces, as the authorisation is a sovereign decision of the States based on their national interest.[153]

Paradoxically, States that do not stimulate international air transportation place themselves in isolation from the world and avoid the benefits that civil aviation brings. Therefore, such States enter a virtuous circle in which the authorisation to allow international air transport services using foreign aircraft is necessary to grow their civil aviation system.

Finally, because both manned aircraft and UA share the same atmosphere and the same phases of flight, they also share the same risks. The following chapter will examine the safety-related aspects of international air navigation by UA.

151 See Article 8 on pilotless aircraft of the Chicago Convention 1944.
152 See the Preamble of the Chicago Convention 1944.
153 See Article 1 of the Chicago Convention 1944.