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WORKING PAPER

LEGAL COMMITTEE – 36TH SESSION

(Montréal, 30 November to 3 December 2015)

Agenda Item 2: Consideration of the General Work Programme of the Legal Committee

STUDY OF LEGAL ISSUES RELATING TO REMOTELY PILOTED AIRCRAFT

(Presented by the Secretariat)

1. BACKGROUND

1.1 During the 38th Session of the Assembly, the Republic of Korea presented working paper A38-WP/262, which reasoned that there was a need for further legal research and examination of Remotely Piloted Aircraft (RPA) liability matters in light of the increasing use of RPA, and contained, inter alia, a proposal that ICAO organize a study group similar to the Unmanned Aircraft System Study Group (UAASG), to examine and conduct legal research on liability related to RPA. Mindful of the limited resources of the Organization, particularly given that third-party liability regimes already exist, the Legal Commission expressed the sentiment that prior to the establishment of a study group, initial research could be undertaken to determine whether the regime for liability to third parties under the Rome Convention of 1952 and the Montreal Conventions of 2009 left any issues to be addressed. Thereafter, if necessary, Member States could be surveyed on their applicable national liability regimes.

1.2 On this basis, the Assembly added the subject "Study of legal issues relating to remotely piloted aircraft" to the work programme of the Legal Committee with priority number 6.

2. CONSIDERATION BY THE COUNCIL

2.1 During the fifth meeting of the 200th Session of the Council on 29 November 2013, the Secretary General presented the actions taken by the 38th Session of the Assembly with regard to the General Work Programme of the Legal Committee (C-WP/14068), which were confirmed and approved by the Council (C-DEC 200/5), including the prioritization of items.

2.2 Subsequently, during the 203rd Session of the Council, in taking the action proposed in C-WP/14194, the Council again confirmed and approved the General Work Programme of the Legal Committee but further decided to raise the priority of the RPAS liability study from number 6 to number 4 (C-DEC 203/5).

3. SUBSEQUENT ACTION

3.1 In light of the action of the 38th Session of the Assembly and in compliance with the Council's decision, the Legal Affairs and External Relations Bureau (LEB) undertook a study of the issue of liability as it relates to remotely piloted aircraft, which is reproduced in the Appendix hereto.

4. ACTION BY THE COMMITTEE

4.1 The Committee is invited to:

a) note the Secretariat study; and

b) decide on the future work, if any.

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APPENDIX

LEGAL ISSUES RELATING TO REMOTELY PILOTED AIRCRAFT (LIABILITY)

1. INTRODUCTION

1.1 As noted in the recently published *Manual on Remotely Piloted Aircraft Systems (RPAS)* (ICAO Doc 10019), "[r]emotely piloted aircraft systems (RPAS) are a new component of the civil aviation system… which the International Civil Aviation Organization (ICAO), States and the industry are working to understand, define and ultimately integrate." And, as is also noted in the Manual, "[c]ivil aviation has, to this point, been based on the notion of a pilot operating the aircraft from within the aircraft itself and more often than not with passengers on board." Given the continuing propagation of RPAS and the corresponding efforts of the international aviation community to address the myriad technical and operational issues arising from the removal of the pilot from the aircraft, a re-examination of specific aspects of international air law is warranted to ascertain the adequacy and efficacy of the existing legal framework for RPAS integration.

1.2 In light of the discussion during, and decision of, the 38th Session of the Assembly, and subsequent action by the Council, a study is hereby presented on the existing international legal liability regime, to expressly include the regime for liability to third parties under the Rome Convention of 1952 and the Montreal Conventions of 2009, to determine whether there were any issues that needed to be addressed with respect to RPAS.

2. BACKGROUND – REMOTELY PILOTED AIRCRAFT AS "AIRCRAFT"

2.1 Beginning with the Protocol of 15 June 1929 to amend the *Convention Relating to the Regulation of Aerial Navigation* (1919 Paris Convention), pilotless aircraft have been a part of the legal framework for international civil aviation.[1] The original text of Annex 7 to the *Convention on International Civil Aviation*, signed at Chicago on 7 December 1944, as amended (Doc 7300) (Chicago Convention), defined "aircraft" as "any machine that can derive support in the atmosphere from the reactions of the air." This definition was adapted from the French language text of the definition of "aircraft" in the 1919 Paris Convention ("*Le mot aéronef désigne tout appareil pouvant se soutenir dans l' atmosphere grâce aux reactions de l' air*."). In 1967, amendments to Annex 7 included a new definition of "aircraft" as "any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface," to exclude hovercraft from its scope. Today, Annex 7 makes it clear that remotely piloted aircraft (RPA) are simply one type of unmanned aircraft,[2] and all unmanned (pilotless) aircraft, whether remotely piloted, fully autonomous, or combinations thereof, are subject to the provisions of Article 8 of the Chicago Convention.[3]

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1 The *Protocol relating to amendments to Articles 3,5,7,15,34,37,40,41 and 42 and to the final clauses of the Convention Relating to the Regulation of Air Navigation of October 13, 1919*, done at Paris, June 15, 1929, modified Article 15, in pertinent part, as follows: "No aircraft of a contracting State capable of being flown without a pilot shall, except by special authorization, fly without a pilot over the territory of another contracting State."

2 *See Annex 7 to the Convention on International Civil Aviation: Aircraft Nationality and Registration Marks*, at 2 (6th ed., 2012) [hereinafter *Annex 7*].

3 *Id.*

2.2 Article 8 of the Chicago Convention, entitled "Pilotless aircraft", provides:

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

2.2.1 Thus, although RPA are *aircraft*, as a consequence of this "special authorization" requirement, their operation is not contemplated within the ambit of the "special permission or other authorization" for "scheduled international air service" under Article 6 of the Convention,[4] which typically takes the form of a reciprocal exchange of air traffic rights between States by means of a bilateral air transport (or air services) agreement. Rather, the "special authorization" required for overflight of the territory of another State by "pilotless aircraft" under Article 8 is analogous to the "authorization by special agreement or otherwise" required for overflight of or landing upon the territory of another State by "state aircraft"[5] under Article 3 of the Convention.[6]

2.3 In addition to the "special authorization" requirement for "pilotless aircraft" under Article 8, the treatment of RPA under the Chicago Convention is distinguishable from that of conventional manned aircraft in two key respects. First, as the plain wording of Article 8 makes clear, drafters intended "pilotless aircraft" to include aircraft that were remotely controlled (e.g., from the ground via radio signals); thus, "pilotless aircraft" in the sense of Article 8 refers to an aircraft flown without a "pilot" as understood within the meaning of Article 32 of the Convention — i.e., a pilot operating *on board* the aircraft. Ergo, a "remote pilot"[7] is not considered a "pilot" within the meaning of Article 32, which provides, in pertinent part, that:

> "[t]he pilot of every aircraft and the other members of the operating crew of every aircraft engaged in international navigation shall be provided with certificates of competency and licenses issued or rendered valid by the State in which the aircraft is registered."

2.3.1 To close this interpretive gap and thereby ensure that remote pilots likewise have the relevant competencies for RPA/RPAS operations, Annex 2 to the Chicago Convention was amended in 2012 (Amendment No. 43) to include a Standard requiring remote pilots to be licensed in a manner consistent with Annex 1 (*Personnel Licensing*),[8] though, as noted in the RPAS Manual, these certification and licensing Standards are not yet developed.[9]

2.4 The second way in which the treatment of RPA under the Chicago Convention is distinguishable from that of conventional manned aircraft relates to the mutual recognition of certificates and licenses among States. Article 33 of the Chicago Convention provides:

> "Certificates of airworthiness and certificates of competency and licenses issued or rendered valid by the contracting State in which the aircraft is registered, shall be

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4 Article 6 (*Scheduled air services*) of the Chicago Convention provides:
No scheduled international air service may be operated over or into the territory of a contracting State, except with the special permission or other authorization of that State, and in accordance with the terms of such permission or authorization.

5 Article 3 b) of the Chicago Convention defines "state aircraft" as "[a]ircraft used in military, customs and police services."

6 Article 3 c) provides: "No state aircraft of a contracting State shall fly over the territory of another State or land thereon without authorization by special agreement or otherwise, and in accordance with the terms thereof."

7 "Remote pilot" is defined as "[a] person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time." Manual on Remotely Piloted Aircraft Systems (RPAS), ICAO Doc 10019, AN/507 (1st ed., 2015) [hereinafter "RPAS MANUAL (ICAO Doc 10019)"].

8 *Annex 2* to the *Convention on International Civil Aviation: Rules of the Air*, Appendix 4 – Remotely Piloted Aircraft Systems, para. 2.3 (6th ed., 2012) [hereinafter *Annex 2*].

9 RPAS MANUAL (ICAO Doc 10019), *supra* note 7, at para. 1.3.12 (Note 1).

> recognized as valid by the other contracting States, provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established from time to time pursuant to this Convention."

2.4.1 However, because "certificates of competency and licenses" as used in Article 33 specifically refers to the certificates and licenses mandated for pilots and crew members on board aircraft under Article 32, and since, as discussed previously, a "remote pilot" is not considered a "pilot" within the meaning of Article 32, the requirement for mutual recognition of certificates and licenses under Article 33 does not extend to certificates and licenses for remote pilots.

2.5 Notably, ICAO Assembly Resolution A38-12, Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation, Appendix C – Certificates of airworthiness, certificates of competency, and licenses of flight crews, resolves that:

> "…pending the coming into force of international Standards respecting particular categories of aircraft or flight crew,… certificates issued or rendered valid, under national regulations, by the Member State in which the aircraft is registered shall be recognized by other Member States for the purposes of flight over their territories, including landings and take-offs."

2.5.1 Once again, Annex 2 requires remote pilots to be licensed in a manner consistent with Annex 1, but the relevant certification and licensing Standards have not yet been adopted. This raises the question of whether Resolution A38-12, Appendix C, requires Contracting States to recognize certificates and licenses for remote pilots issued by the State of registry, pending the coming into force of the Annex 1 Standards that are currently under development. The answer, however, is plainly no, because as in the case of Article 33, insofar as "certificates and licenses" as used in Resolution A38-12, Appendix C, relates to pilots, it too relates "pilots" within the meaning of Article 32. Consequently, the A38-12 mandate for the mutual recognition of certificates and licenses among Contracting States in the absence of ICAO Standards likewise does not extend to certificates and licenses for "remote pilots." Therefore, adoption of a specific Standard for mutual recognition, like the ones for "air operator certificates" in Annex 6 and for "noise certifications" in Annex 16,[10] may be desirable to require Contracting States to recognize certificates and licenses for remote pilots issued or rendered valid by other Contracting States.[11]

2.6 Aside from the foregoing provisions, however, the terms of the Chicago Convention related to aircraft apply equally to RPA engaged in international air navigation. Thus, like any other aircraft, RPA must comply with orders to land and other instructions issued by the overflown State pursuant to Article 3 *bis*; operate in accordance with rules of the air in accordance with Article 12; have access to airports on a nondiscriminatory basis under Article 15; bear appropriate nationality and registration marks as required by Article 20; carry required documentation as per Article 29; and have a

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[10] *See, e.g.*, *Annex 6* to the *Convention on International Civil Aviation: Operation of Aircraft*, *Part I: International Commercial Air Transport—Aeroplanes*, para. 4.2.2.1 (7th ed., 2014) [hereinafter *Annex 16*] "Contracting States shall recognize as valid an air operator certificate issued by another Contracting State, provided that the requirements under which the certificate was issued are at least equal to the applicable Standards specified in this Annex and in Annex 19"); *and Annex 16* to the *Convention on International Civil Aviation: Environmental Protection*, *Volume I: Aircraft Noise*, para. 1.8 (7th ed., 2014) [hereinafter *Annex 16*] ("Contracting States shall recognize as valid a noise certification granted by another Contracting State provided that the requirements under which such certification was granted are at least equal to the applicable Standards specified in this Annex.").

[11] *See* RPAS MANUAL (ICAO Doc 10019), para. 1.3.12 (Note 1), which states:

> Certification and licensing Standards [for RPAS] are not yet developed. Thus, in the meantime, any certification and licensing need not be automatically deemed to comply with the SARPs of the related Annexes, including Annexes 1, 6 and 8, until such time as the related RPAS SARPs are developed.

certificate of airworthiness issued or rendered valid by the State in which it is registered in accordance with Article 31.[12]

3. INTERNATIONAL LIABILITY REGIMES

3.1 Pecuniary liability with respect to international aviation is currently governed by two separate and distinct international legal regimes. With respect to passengers and their baggage, as well as cargo, liability is principally governed by the 1999 *Convention for the Unification of Certain Rules for International Carriage by Air* (1999 Montreal Convention), which updated and consolidated the system of treaties and protocols rooted in the 1929 *Convention for the Unification of Certain Rules Relating to International Transportation by Air* (1929 Warsaw Convention), commonly referred to as the "Warsaw Convention system,"[13] into a single treaty. Alternatively, liability relating with to the loss of life, personal injury, and/or damage to property of third parties on the surface, is governed by the 1952 *Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface* (1952 Rome Convention), as amended by the 1978 *Protocol to amend the Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface*, done at Montreal (1978 Montreal Protocol)[14] – collectively, the "Rome Convention system."

3.2 Like the Warsaw Convention system, the Rome Convention system too was the subject of a modernization overhaul, which produced the 2009 *Convention on Compensation for Damage Caused by Aircraft to Third Parties* (General Risks Convention),[15] and the 2009 *Convention on Compensation for Damages to Third Parties, Resulting from Acts of Unlawful Interference Involving Aircraft* (Unlawful Interference Compensation Convention).[16] However, in contrast to the Montreal Convention, which not only entered into force in 2003, but has also garnered 111 States parties, neither of the two 2009 treaties comprising the modernized and now bifurcated Rome Convention system have obtained the number of ratifications necessary to enter into force.[17]

3.3 1999 Montreal Convention and the Warsaw Convention System

3.3.1 Article 1(1) of the 1999 Montreal Convention (MC99) specifies that the treaty is applicable to air carrier liability with respect to the "international carriage of persons, baggage or cargo performed by *aircraft* for reward… [or] gratuitous carriage performed by an air transport undertaking." The treaty itself does not define "aircraft"; however, Annex 7 to the Chicago Convention supplies an

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[12] Though Article 31 applies to RPA engaged in international air navigation, it is recognized that there will be differences and special considerations for type and airworthiness approvals for RPA, RPS, and RPAS as a complete system, versus type and airworthiness approvals for traditional manned aircraft. Airworthiness and certification of RPA, RPS, and RPAS are addressed in RPAS MANUAL (ICAO Doc 10019), Chapter 4.

[13] In addition to the 1929 Warsaw Convention, ICAO Doc 7838, the instruments comprising the "Warsaw Convention system" include the *Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air signed at Warsaw on 12 October 1929*, 28 September 1955, ICAO Doc 7632 (the Hague Protocol); the *Convention Supplementary to the Warsaw Convention, for the Unification of Certain Rules Relating to International Carriage by Air Performed by a Person Other than the Contract Carrier*, 18 September 1961, ICAO Doc 8181 (1961 Guadalajara Convention); *Additional Protocol No. 1 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air*, signed at Montreal on 25 September 1975, ICAO Doc 9145 (Montreal Protocol No. 1); *Additional Protocol No. 2 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, as Amended by the Protocol done at the Hague on 28 September 1955*, signed at Montreal on 25 September 1975, ICAO Doc 9146 (Montreal Protocol No. 2); and *Montreal Protocol No. 4 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air*, signed at Warsaw on 12 October 1929 as *Amended by the Protocol done at the Hague on 28 September 1955*, 25 September 1975, ICAO Doc 9148 (Montreal Protocol No. 4).

[14] The 1978 Montreal Protocol sought to update the system of liability for damage on the surface mainly by increasing the limits of liability, but it left the substantive provisions of the 1952 Rome Convention, especially those related to applicability of the treaty system, for the most part unchanged.

[15] ICAO Doc 9919 (2009).

[16] ICAO Doc 9920 (2009).

[17] To date, the General Risks Convention has secured only 7 of the 35 ratifications necessary for it to enter into force, while the Unlawful Interference Compensation Convention has secured only 4 of the requisite 35 ratifications. The Unlawful Interference Compensation Convention has additional criteria that must be fulfilled before it can enter into force.

internationally accepted definition of an "aircraft" as "[a]ny machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface." And, as alluded to previously,[18] Annex 7 explains that "[a]n aircraft which is intended to be operated with no pilot on board shall be further classified as unmanned," and that "[u]manned aircraft shall include [inter alia]… remotely piloted aircraft."[19] So, when considered in view of the Chicago Convention and, particularly, Annex 7, international carriage performed by an RPAS is unquestionably carriage "performed by aircraft" and, therefore, falls within the scope of MC99.

3.3.2 Notably, the term "air transport undertaking" is likewise not defined by the treaty, though its meaning is not considered controversial. Still, Article 96 c) of the Chicago Convention is illuminating in this regard, as it defines "airline" as "any *air transport enterprise* offering or operating an international air service." (emphasis added) So too is Annex 6 to the Chicago Convention, wherein it analogously defines "commercial air transport operation" as "an aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.".[20] In the *Manual on Remotely Piloted Aircraft Systems (RPAS)* (ICAO Doc 10019), it is observed that "…initially all of the constituent components of the RPAS are expected to be managed under a single operator certificate with one State providing oversight of the operation and compliance with the applicable regulations, codes and standards."[21] In such case, based on the foregoing, "air transport undertaking" as used in MC99 and the Warsaw Convention system (WCS) must be reasonably understood as encompassing an RPAS operator certificate holder that offers or provides international carriage of persons, baggage, or cargo for reward, or gratuitously.

3.3.3 It also is anticipated that "RPAS operators may develop business cases that are dependent upon the sharing of resources"; for example, an RPAS operator may contract for "local area" remote pilot station (RPS) services.[22] But to the extent that the service provider is, by virtue of such contract, legally deemed a servant or agent of the RPAS operator, their liability would still fall within the scope of MC99 pursuant to Article 30, which states:

> "If an action is brought against a servant or agent of the carrier arising out of damage to which the Convention relates, such servant or agent, if they prove that they acted within the scope of their employment, shall be entitled to avail themselves of the conditions and limits of liability which the carrier itself is entitled to invoke under this Convention."

3.3.4 If, on the other hand, such service provider is not considered a servant or agent of the RPAS operator, Article 1(4) clarifies that MC99 nonetheless applies to carriage by air performed by a person other than the contracting carrier, but under the authority of the contracting carrier, even absent any contractual link between that person and the passenger or shipper. In this latter context, the respective liability of the RPAS service provider as the "actual carrier" performing "the whole or part of the carriage," and the RPAS operator as the "contract carrier," in the aforesaid scenario, would thus be governed by Chapter V (Articles 39 through 48) of the treaty, relating to "Carriage by Air Performed by a

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18 *See supra* notes 1-3 and accompanying text.

19 *Annex 7*, para. 2.2 & 2.3; *see also* RPAS MANUAL (ICAO Doc 10019), Figure 1-1 & para. 2.1-2.3.

20 Prominent air law jurists and scholars have used markedly similar wording to explain the meaning of "air transport undertaking" in the context of MC99 and the Warsaw Convention system, as well. *See* PAUL S. DEMPSEY & MICHAEL MILDE, INTERNATIONAL AIR CARRIER LIABILITY: THE MONTREAL CONVENTION OF 1999 at 68 (2005) ("Common interpretation [of 'air transport undertaking'] should cover airlines and other entities duly licensed under the laws of a State to perform carriage of passengers, baggage, and goods for remuneration."); RENÉ H. MANKIEWICZ, THE LIABILITY REGIME OF THE INTERNATIONAL AIR CARRIER 36 (1981) ("Such an undertaking is any enterprise that habitually and normally performs air transportation…." (citing CHRISTOPHER N. SHAWCROSS & KENNETH M. BEAUMONT, SHAWCROSS AND BEAUMONT ON AIR LAW, para. 417 (4th ed., 1977)); *see also* N. H. MOLLER LAW OF CIVIL AVIATION 288 (1936) ("The Warsaw Rules… are designed to apply to all international carriage of persons, luggage and goods, performed by aircraft for reward; and in the case of air transport undertakings, which, incidentally, are not the subject of definition, the gratuitous carriage by their aircraft.").

21 RPAS MANUAL, *supra* note 19, para. 4.16.2.

22 *Id.* para. 4.16.3.

Person Other Than the Contracting Carrier," which incorporates the essential provisions of the 1961 Guadalajara Convention.[23]

3.3.5 In sum, Article 1(1) of MC99, which was adopted almost word-for-word from the 1929 Warsaw Convention, fixes in a straightforward manner the liability for damage with respect to carriage of passengers, baggage, or cargo, on the air carrier performing the international carriage, with no distinction being made with respect to whether said carriage is performed by an aircraft with a pilot on board versus an aircraft that is remotely piloted.[24] Consequently, an RPAS operator functioning as an international airline and/or performing commercial air transport operations or otherwise providing gratuitous international carriage, is equally liable for the death or injury of a passenger or the destruction, loss, damage, or delay of their baggage or of cargo, under either MC99 or, to the limited extent it is still applicable, the WCS. Article 1(4) would further extend the applicability of MC99 to international carriage by an RPAS operator that is not identified as the contracting carrier, but who nevertheless performs the whole or part of the carriage.

3.3.6 Though the absence of a pilot on board the aircraft might possibly give rise to heretofore unforeseen evidentiary issues in future damage suits arising out of international carriage via RPAS, whether due to an "accident" causing death or bodily injury of a passenger or other events resulting in loss, damage, or destruction of baggage or cargo, the applicability of MC99 (or the WCS) means that the many judicial decisions interpreting the relevant terms of these treaties will remain a source of continuing guidance in cases involving RPAS.[25] Having said this, given current technological limitations and associated safety concerns, it is highly unlikely that passenger transport operations, whether performed for reward or otherwise by an air transport undertaking, will be performed using an RPAS in the foreseeable future. Thus, in the context of RPAS, the issue of liability related to passengers and their baggage has little practical relevance at the present time. Conversely, academia and industry have proffered predictions that that within forty years up to forty-percent of air-cargo will be transported by unmanned aircraft. [26] Consequently, MC99 and the WCS may be expected to perhaps have more immediate relevance with respect to RPAS in the case of cargo transport.

3.4 The Rome Convention System

3.4.1 The aim of the 1952 Rome Convention is:

> "…to ensure adequate compensation for persons who suffer damage caused on the surface by foreign aircraft, while limiting in a reasonable manner the extent of liabilities incurred for such damage in order not to hinder the development of international civil air transport."[27]

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[23] There are currently twenty-nine States Parties to the 1929 Warsaw Convention that are not parties to either the 1961 Guadalajara Convention or the 1999 Montreal Convention (*see* Appendix 1). For these States, there remains a legal "loophole" in the application of the Warsaw system of liability generally, since application of the 1929 Warsaw Convention is contingent upon the existence of a contract for carriage between carrier and the passenger or shipper. However, the existence of this loophole is unaffected by the question of whether the carriage concerned is performed via conventional aircraft or RPAS.

[24] MC99 consolidated and modernized the Warsaw Convention system, and as between its 111 States Parties, it replaces all of the previous Warsaw system instruments. *See* 1999 Montreal Convention, Art. 55. In addition, since much of the verbiage and structure of MC99 was derived from Warsaw system instruments, many Warsaw system principles and concepts remain unchanged by MC99. Thus, the decades of jurisprudence and scholarship interpreting the nearly identical provisions of the 1929 Warsaw Convention and other Warsaw system instruments, such as the Hague Protocol, can also likewise serve as an aid to interpreting MC99. The Warsaw Convention system instruments continue to apply among States not yet party to MC99 and in relations among MC99 States Parties with non-States Parties.

[25] INT'L CIVIL AVIATION ORG., *International Conference on Air Law (Convention for the Unification of Certain rules for International Carriage by Air)—Minutes*, at 218-220, ICAO Doc 9775-DC/2 (1999); see *also* DEMPSEY & MILDE, *supra* note 20, at 121.

[26] *See*, *e.g.*, PLATFORM UNMANNED CARGO AIRCRAFT, FACTSHEET 1: CIVIL UNMANNED CARGO AIRCRAFT (2015), *available at* http://www.platformuca.org/factsheet-1-civil-unmanned-cargo-aircraft/; DEPARTMENT OF INDUSTRIAL ENGINEERING & BUSINESS INFORMATION SYSTEMS, THE UNIVERSITY OF TWENTE, UNMANNED CARGO AIRCRAFT AND THE UNIVERSITY OF TWENTE: CHARACTERISTICS OF UNMANNED CARGO AIRCRAFT, *available at* http://www.utwente.nl/bms/iebis/newsevents/2014-04-23-unmannedcargoaircraftut/.

[27] 1952 Rome Convention, Preamble.

3.4.2 The 1952 Rome Convention imposes a system of strict, but limited, liability for damage on the surface "…caused by an aircraft in flight or by any person or thing falling therefrom."[28] As in the case of MC99, the Rome Convention does not define "aircraft"; but, here again, the meaning of the term within the context of the treaty is generally understood to correspond with the definition of "aircraft" in Annex 7 to the Chicago Convention.[29] Accordingly, damage on the surface caused by a RPA would plainly fall within the scope of the Rome Convention.

3.4.3 Under Article 2(1) of the treaty, liability primarily attaches to the "operator" of the aircraft, which is defined in Article 2(2), subparagraph (a), to mean:

> "…the person who was making use of the aircraft at the time the damage was caused, provided that if control of the navigation of the aircraft was retained by the person from whom the right to make use of the aircraft was derived, whether directly or indirectly, that person shall be considered the operator."

Article 2(2), subparagraph (b), further provides:

> "A person shall be considered to be making use of an aircraft when he or she is using it personally or when his or her servants or agents are using the aircraft in the course of their employment, whether or not within the scope of their authority."

And, per Article 2(3), the registered owner of the aircraft is presumed to be the operator.[30]

3.4.4 Article 11(1) provides that the liability for damage for each aircraft and incident, in respect of all persons liable under the Convention, shall not exceed:

(a) 500 000 gold francs (approximately USD $40 000) for aircraft weighing 1 000 kilogrammes or less;

(b) 500 000 gold francs plus 400 francs (approximately USD $32) per kilogram over 1 000 kilogrammes for aircraft weighing more than 1 000 but not exceeding 6 000 kilogrammes;

(c) 2 500 000 francs (approximately USD $200 000) plus 250 francs (approximately USD $20) per kilogram over 6 000 kilogrammes for aircraft weighing more than 6 000 but not exceeding 20 000 kilogrammes;

(d) 6 000 000 francs (approximately USD $480 000) plus 150 francs (approximately USD $12) per kilogram over 20 000 kilogrammes for aircraft weighing more than 20 000 but not exceeding 50 000 kilogrammes; and

(e) 10 500 000 francs (approximately USD $840 000) plus 100 francs (approximately USD $8) per kilogram over 50 000 kilogrammes for aircraft weighing more than 50 000 kilogrammes.

In addition to the limit per aircraft, Article 11(2) states that liability in respect of loss of life or personal injury shall not exceed 500 000 gold francs per person killed or injured.

3.4.5 Article 14 contains rules on apportionment in case the total amount of claims established exceeds the treaty limits on liability.

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[28] *Id*. Art. 1(1).

[29] *See supra* notes 1-3 and accompanying text.

[30] 1952 Rome Convention, Art. 2(3), provides:

> The registered owner of the aircraft shall be presumed to be the operator and shall be liable as such unless, in the proceedings for the determination of his liability, he proves that some other person was the operator and, in so far as legal procedures permit, takes appropriate measures to make that other person a party in the proceedings.

3.4.6 In 1978, the Montreal Protocol to amend the Convention was adopted. In particular, the limits on liability were upwardly revised, with the Special Drawing Rights (SDRs) replacing gold francs as the unit of currency.[31] The weight categories were also reduced from five to four, as follows:

(a) 300 000 SDRs for aircraft weighing 2 000 kilogrammes or less;

(b) 300 000 SDRs plus 175 SDRs per kilogram over 2 000 kilogrammes for aircraft weighing more than 2 000 but not exceeding 6 000 kilogrammes;

(c) 1 000 000 SDRs plus 62.5 SDRs per kilogram over 6 000 kilogrammes for aircraft weighing more than 6 000 but not exceeding 30 000 kilogrammes; and

(d) 2 500 000 SDRs plus 65 SDRs per kilogram over 30 000 kilogrammes for aircraft weighing more than 30 000.

The Protocol further set the maximum liability in respect of life or personal injury at 125 000 SDRs per person killed or injured, and rules on apportionment between claims in the event they exceed the liability limits were also modified to giver higher preference to claims in respect of loss of life or personal injury.

3.4.7 Once more, in the case of an RPAS operator that manages "all of the constituent components of the RPAS… under a single operator certificate"[32] – to presumably include being the registered owner of the RPA – the identity of the "operator" for purposes of application of the Rome Convention is fairly obvious and clear-cut: it is the RPAS operator certificate holder. Indeed, even in the hypothetical scenario wherein the various constituent components of the RPAS are shared by two or more RPAS operators, the "operator" for purposes of Rome would at least initially be readily decipherable, since, again, under Article 2(3), the registered owner of the RPA is presumptively deemed the operator.

3.4.8 Notably, Article 2(3) allows the registered owner of the aircraft to shed the yoke of liability if it can prove that another was making use of the aircraft at the time the damage was caused. At the same time, however, consistent with Article 2(2), even where another is using the aircraft to their own benefit (profit),[33] if the person from whom the right to use of the aircraft was derived retains control of the navigation of the aircraft, the latter is liable as operator. Whether a person controls the navigation of the aircraft within the meaning of Article 2(2) is a question of fact that must ultimately be determined from an analysis of the circumstances of the particular case, based not only on whether the person determines the course of flight of the aircraft from one point to another, but also, for example, on whether it gives orders to the crew concerning navigation or otherwise direct operations, such as determining what maintenance or refueling stops will be made.[34]

3.4.9 In the case of two or more RPAS operators sharing use of constituent system components of an RPA that causes damage on the surface, there could thus potentially be presented a factual issue as to who the "operator" of the RPA is for purposes of assigning liability under the Rome Convention system (RCS). Under Article 2, the identity of the operator remains limited to one of three possibilities: (a) the registered owner of the RPA; (b) the person who the registered owner proves was making use of the RPA at the time the damage was caused; or (c) notwithstanding whether the registered owner proves another person was making use of the of the RPA at the time the damage, the person from whom the right to use of the RPA was derived, *provided* that person retained control over its navigation. Nevertheless, the burden of this potentially enigmatic exercise, in any case, rests with registered owner, who is presumed to be the operator unless it proves otherwise. Therefore, as in the case of MC99 and the WCS, though the propagation of RPAS will likely expose a new evidentiary landscape relating to how liability for damage on the surface is to be assigned among RPAS operators under the RCS, the regime in its current state is legally adequate to accommodate RPAS technology.

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[31] The current value of Special Drawing Rights (SDRs) can be obtained from the International Monetary Fund (IMF) website, *at* http://www.imf.org/external/np/fin/data/rms_five.aspx.

[32] RPAS MANUAL, *supra* note 19, para. 4.16.2.

[33] *Minutes and Documents*, ICAO Legal Comm., 5th Sess., at 38-40, ICAO Doc 6029-LC/126 (1950).

[34] *Id*. at 40-44, 73-83.

3.4.10 As noted at the outset of this section, the 1952 Rome Convention was adopted to unify, on an international level, the law relating to recovery by persons who suffer damage caused by foreign aircraft, while limiting the liabilities of those responsible for such damage. The Convention also deals with a host of related matters such as apportionment of claims, financial security requirements, jurisdiction and enforcement of judgments. The 1978 Montreal Protocol increased the limits of liability. However, neither the Convention nor the Protocol has received wide acceptance: the Convention has 49 parties after 63 years of existence, while the Protocol attracted the minimum five ratifications necessary for it to enter into force in 2002 and has since gained seven additional ratifications, for a total of 12 parties in 37 years. One of the commonly espoused reasons for this situation is that the limits of liability in the Convention and Protocol are perceived as inadequate. Some further regard the system's near-absolute liability regime, jurisdictional clauses, and provisions relating to financial security, as not fully satisfactory. Still, whatever the perceived inadequacies of the RCS may be, they go beyond and are completely unrelated to the basic question of the adequacy of the system's existing provisions for affixing liability for damage on the surface caused by foreign aircraft, including RPA.

4. THE MONTREAL CONVENTIONS OF 2009

4.1 Following on the heels of the success of the Montreal Conference of 1999, a diplomatic conference convened from 20 April to 2 May 2009 adopted the texts of the two conventions, namely:

(a) *Convention on Compensation for Damage Caused by Aircraft to Third Parties* (commonly called "the General Risks Convention"); and

(b) *Convention on Compensation for Damage Caused by Aircraft to Third Parties*, in case of Unlawful Interference (commonly referred to as "the Unlawful Interference Compensation Convention").

4.2 Both the General Risks Convention and the Unlawful Interference Compensation Convention seek to balance States Parties' dual interests in equitably compensating third-party victims and financially safeguarding the aviation industry. And both treaties impose strict liability on the aircraft operator for "…damage to third parties which occurs in the territory of a State Party caused by an aircraft in flight on an international flight," though by declaration State Parties may extend applicability of both treaties to domestic flights, as well.[35] Neither Convention applies to damage caused by "State aircraft", comprising "[a]ircraft used in military, customs and police services."[36]

4.3 As with each of the treaties discussed previously, "aircraft" is not specifically defined in either the General Risks Convention or the Unlawful Interference Compensation Convention. Thus, here again, the Annex 7 definition of "aircraft," which has served as a cornerstone of air law for decades,[37] and which does not require the existence of any crew on board the aircraft,[38] must be recalled; meaning that both the General Risks Convention and the Unlawful Interference Compensation Convention apply equally to manned and unmanned aircraft, including RPA.

4.4 The "operator" under the definition common to both the General Risks and the Unlawful Interference Compensation Conventions means the person who makes use of the aircraft, provided that if control of the navigation of the aircraft is retained by the person from whom the right to make use of the aircraft is derived, whether directly or indirectly, that person shall be considered the operator.[39] This common definition also repeats the language of Article 2(2), subparagraph (b), of the 1952 Rome Convention word-for-word, clarifying that:

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[35] General Risks Convention, Art. 2 & 3(1); Unlawful Interference Convention, Art. 2 & 3(1).
[36] General Risks Convention, Art. 2(4); Unlawful Interference Convention, Art. 2(4).
[37] *See supra* note 29.
[38] *See supra* notes 2 & 3 and accompanying text.
[39] General Risks Convention, Art. 1(f); Unlawful Interference Convention, Art. 1(f).

> "[a] person shall be considered to be making use of an aircraft when he or she is using it personally or when his or her servants or agents are using the aircraft in the course of their employment, whether or not within the scope of their authority."[40]

4.5 For purposes of the Unlawful Interference Compensation Convention, the operator does not lose its status as operator by virtue of the fact that another person commits an act of unlawful interference.[41]

4.6 Conspicuously absent from the common definition is the Rome Convention's presumption of the registered owner as the operator, which was done away with early in the modernization process that produced the two 2009 Conventions. To wit, the Secretariat Study Group on the Modernization of the Rome Convention (SSG-MR), which was established by the Council in 2002, over the course of four meetings held between December 2002 and November 2003 produced a draft Convention on Damage Caused by Foreign Aircraft to Third Parties.[42] The SSG-MR removed the presumption of the registered owner as the operator from its draft Convention on the premise that the growing prevalence of aircraft leasing had rendered its underlying premise invalid.[43] This SSG-MR draft would become the focus of the 32nd Session of the Legal Committee (Montreal, 15-21 March 2004), and would thereafter serve as the baseline for the work of the Council's Special Group on the Modernization of the Rome Convention of 1952, which would eventually decide to split it into two conventions, one dealing with general risks and one with terrorism-related risks.[44]

4.7 Without the Rome Convention's presumption of the registered owner as the operator, every determination as to whether a given RPAS operator is liable as the operator of the aircraft causing damage to third parties under the General Risks Convention or otherwise under the Unlawful Interference Compensation Convention, must be made on a case-by-case basis, based on the evidence presented in each case. At the same time, the process of identifying the operator is somewhat streamlined, as the universe of possibilities is reduced from three to two: (a) the person making use of the RPA at the time the damage was caused; or (b) the person from whom the right to use of the RPA was derived, *provided* that person retained control over its navigation.

4.8 As noted previously, the language of the common definition of operator clarifying what it means to "make use" of an aircraft is identical to Article 2(2), subparagraph (b), of the 1952 Rome Convention. Thus, as under Rome, in the case of an RPAS operator functioning as a single overseer, the identity of the person making use of the RPA as operator for purposes of assigning liability under either the General Risks Convention or the Unlawful Interference Compensation Convention is tantamount to a *fait accompli*. On the other hand, the identity of the operator of an RPA that causes damage where two or more RPAS operators are sharing use of constituent system components similarly remains a question of fact under either of the new Conventions.

4.9 Of course, with no presumption of the registered owner as the operator positing the onus on the registered owner to accept liability or prove another was making use of the aircraft at the time the damage was caused, both the General Risks and Unlawful Interference Compensation Conventions place the *prima facie* burden of establishing the identity of the aircraft operator on the third-party victim. The

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40 General Risks Convention, Art. 1(f); Unlawful Interference Convention, Art. 1(f).

41 Unlawful Interference Convention, Art. 1(f).

42 *Compensation for Damage Caused by Aircraft to Third parties Arising from Acts of Unlawful Interference or from General Risks*, ICAO Legal Comm., 33rd Sess., Working Paper, Agenda Item 3, at 1, ICAO Doc LC/33-WP/3-1 (2008).

43 *See Report of the ICAO Secretariat Study Group on the Modernization of the Rome Convention*, ICAO Secretariat Study Gp. on the Modern. of the Rome Conv. (SSG-MR), 3rd mtg., at 13-14, ICAO Doc SSG-MR/3-REPORT (2003); *Draft Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface*, ICAO Secretariat Study Gp. on the Modern. of the Rome Conv. (SSG-MR), 3rd mtg., Art. 10(3), at A-7, ICAO Doc SSG-MR/3-WP/1 (2003); *see also Report of the ICAO Secretariat Study Group on the Modernization of the Rome Convention*, ICAO Secretariat Study Gp. on the Modern. of the Rome Conv. (SSG-MR), 4th mtg., at 8, ICAO Doc SSG-MR/4-REPORT (2003); *Draft Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface*, ICAO Secretariat Study Gp. on the Modern. of the Rome Conv. (SSG-MR), 4th mtg., Art. 3, at A-2, ICAO Doc SSG-MR/4-WP/1 (2003).

44 ICAO Doc LC/33-WP/3-1, *supra* note 42, at 2-3.

original purpose behind the presumption was, in fact, to relieve the victim of this burden,[45] and "oblige the registered owner who was sued by the victim and who denied that he was the operator to join with himself… the person who, according to him, was the true operator."[46] However, at the SSG-MR it was agreed that, in practice, the identification of the operator was not difficult, as there are numerous records kept for each flight that address this, and that the normal process of discovery would serve the victim in this respect; accordingly, the presumption was kept out of the modernized text.[47]

4.10 The General Risks Convention

4.10.1 Operator liability under the General Risks Convention is limited based upon the weight of the aircraft,[48] as follows:

(a) 750 000 SDRs for aircraft having a maximum mass of 500 kilogrammes or less;

(b) 1 500 000 SDRs for aircraft having a maximum mass of more than 500 kilogrammes but not exceeding 1 000 kilogrammes;

(c) 3 000 000 SDRs for aircraft having a maximum mass of more than 1 000 kilogrammes but not exceeding 2 700 kilogrammes;

(d) 7 000 000 SDRs for aircraft having a maximum mass of more than 2 700 kilogrammes but not exceeding 6 000 kilogrammes;

(e) 18 000 000 SDRs for aircraft having a maximum mass of more than 6 000 kilogrammes but not exceeding 12 000 kilogrammes;

(f) 80 000 000 SDRs for aircraft having a maximum mass of more than 12 000 kilogrammes but not exceeding 25 000 kilogrammes;

(g) 150 000 000 SDRs for aircraft having a maximum mass of more than 25 000 kilogrammes but not exceeding 50 000 kilogrammes;

(h) 300 000 000 SDRs for aircraft having a maximum mass of more than 50 000 kilogrammes but not exceeding 200 000 kilogrammes;

(i) 500 000 000 SDRs for aircraft having a maximum mass of more than 200 000 kilogrammes but not exceeding 500 000; and

(j) 700 000 000 SDRs for aircraft having a maximum mass of more than 500 000 kilogrammes.

4.10.2 Where the event that causes the damage involves two or more aircraft operated by the same operator, the Convention provides that the limit of liability in respect of the aircraft with the highest maximum mass shall apply.[49] On the other hand, where two or more aircraft operated by different operators are involved in an event that causes the damage, the operators of those aircraft are joint and severally liable, though neither operator shall be liable for a sum in excess of any applicable limit to its liability.[50]

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45 *See* ICAO Doc 6029-LC/126, *supra* note 33, at 85-92.
46 *Id*. at 89.
47 ICAO Doc SSG-MR/4-REPORT, *supra* note 43, at 8.
48 General Risks Convention, Art. 4(1).
49 *Id*. Art. 4(2).
50 *Id*. Art. 6.

4.10.3 However, an operator can avail itself of the Convention's liability limits only if it proves that the damage (a) was not due to its negligence or other wrongful act or omission, or that of its servants or agents; or (b) was solely due to negligence or other wrongful act or omission of another.[51] Preeminent air law jurist Professor Paul Dempsey has argued "…if a catastrophic accident occurs and causes surface damage, there likely will be little evidence of the absence of negligence or the exclusive negligence of a third party for an operator to exonerate itself."[52] So, according to Professor Dempsey, "[i]n all mass disaster litigation, the airline will find itself absolutely liable to the full measure of damages irrespective of fault."[53] It should be noted that the Convention mandates compulsory insurance for operators to the extent of their liability.[54]

4.11 The Unlawful Interference Compensation Convention

4.11.1 The strict liability limits under the *Unlawful Interference Compensation Convention* are identical to those of the General Risks Convention and so too are based upon the weight of the aircraft.[55] The Convention's provisions governing liability where the event that causes the damage involves two or more aircraft, whether operated by the same operator or by different operators, likewise mirror those of the General Risks Convention.[56]

4.11.2 The Unlawful Interference Compensation Convention was, in significant part, a response of the international community to the catastrophic liability incurred as a consequence of the terrorist attacks of September 11, 2001, and thus deals with compensation for damage to third parties resulting from acts of unlawful interference involving aircraft, which encompasses terrorist acts.[57] Accordingly, under the Unlawful Interference Compensation Convention, the aircraft operator retains its status as operator and, therefore, remains liable for damage it causes to third parties specifically where another person commits an act of unlawful interference involving the aircraft.[58]

4.11.3 In addition to compulsory insurance requirements,[59] Chapter III of the Unlawful Interference Compensation Convention[60] envisages a supplementary compensation mechanism with its own managing organization in the form of the *International Civil Aviation Compensation Fund* (ICACF) to, *inter alia*, provide compensation of up to 3 billion SDRs per event should damages exceed the maximum 700 million SDR per event liability threshold.[61] Contributions to the mechanism are to be made by airlines and are calculated based upon the number of passengers and tonnage of cargo departing a State Party on international commercial flights and, if the State has made a declaration to such end per Article 2(2), on domestic flights, as well.[62] Victims may also claim additional compensation from the operator if damage exceeds the 3 billion SDR limit under this supplementary compensation mechanism, but only upon proof that the operator contributed to the occurrence of the damage-causing event with intent or recklessly and with knowledge that damage would probably result.[63]

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51 *Id*. Art. 4(3).
52 PAUL S. DEMSEY, AVIATION LIABILITY LAW 245 (2d. ed., 2013).
53 *Id*.
54 General Risks Convention, Art. 7(1). A 2009 review of air carrier liability conducted by the Australian Government adduced "no evidence" that their then-existing system of purely strict and unlimited liability "…was restraining aviation activity or that it was leading to unsustainably high insurance premiums for operators." DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT AND LOCAL GOVERNMENT, AUSTRALIAN GOVERNMENT, REVIEW OF CARRIERS' LIABILITY AND INSURANCE 27 (2009), *available at* https://infrastructure.gov.au/aviation/international/files/Liability_Insurance_Discussion_Paper.pdf.
55 *Id*. Art. 4.
56 *Compare and* Unlawful Interference Convention, Art. 4(2); *compare also* General Risks Convention, Art. 6; *and* Unlawful Interference Convention, Art. 5.
57 Unlawful Interference Convention, Art. 2.
58 *Id*. Art. 1(f), 2(1) & 3(1)
59 *Id*. Art. 7.
60 *Id*. Art. 8 through 37.
61 *Id*. Art. 18(2).
62 *Id*. Art. 12.
63 *Id*. Art. 23(2).

4.12 Status of the Rome System Modernization

4.12.1 As mentioned at the outset of this study, neither the General Risks Convention nor the Unlawful Interference Compensation Convention has entered into force.[64] A number of reasons have been advanced for the slow support that States have shown for the two 2009 treaties. Yet, as in the case of the 1952 Rome Convention, whatever the deficiencies of the General Risks Convention and the Unlawful Interference Compensation Convention in their present forms, they do not affect the function of each treaty as a rational and operative basis for assigning liability for damage to third-parties, even where the infliction of such damage involves an RPA.

5. CONCLUSION

5.1 ICAO's experience with integrating RPAS into the international aviation system has thus far revealed myriad technical and operational issues arising from the removal of the pilot from the aircraft. However, the status of RPA as "aircraft" within the meaning of Annex 7 to the Chicago Convention places RPA within the scope of the 1999 Montreal Convention and the Warsaw Convention system with respect to air carrier liability related to passengers and their baggage, as well as cargo; and within the scope of the RCS with respect to the operator's liability for damage to third-parties on the surface caused by aircraft.

5.2 In cases arising out of international carriage via RPAS, the applicability of MC99 or the WCS will thus bring with it a well-established and widely accepted body of jurisprudence that will serve to provide legal consistency and clarity to the ultra-modern technical and operational landscape of RPAS, particularly among MC99's 111 States Parties. Also, while noting the limited acceptance of the RCS, it is submitted that the system's existing provisions will continue to provide an effective basis for affixing liability for damage on the surface caused by foreign aircraft, notwithstanding the integration of RPA.

5.3 Finally, as regards the General Risks Convention and the Unlawful Interference Compensation Convention, a key aspect of the suitability of these two Conventions with respect to RPAS – as with all of the Conventions discussed in this study – is the ability of the victim to ascertain the identity of the operator for purposes of assigning liability. The 2009 Conventions depart from the historical presumption of the registered owner as operator, which is seen as obsolete in light of the predominance of aircraft leasing, so that establishing the identity of the RPA operator (i.e., the person making use of the RPA damage is caused) will henceforth in every case be a question of fact. However, the practical and legal significance of this modernized approach to this issue will only become clear as States Parties to the General Risks Convention and/or the Unlawful Interference Compensation Convention gain experience in applying the treaties' provisions.

— END —

[64] *See supra* note 17 and accompanying text.