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3. International aviation law on liability

Benjamyn I. Scott and Jacques Hartmann

1. INTRODUCTION

Within the European Union, there are no harmonised general rules on tort liability and no specific liability rules for unmanned aircraft systems (UAS).¹ Instead, tort law is regulated by domestic law, and Chapters 6–16 provide an overview of the rules in 11 European national jurisdictions, illustrating the variation of different approaches to UAS operations. In addition to domestic law, the EU has developed specific regulations for the operation and manufacturing of UAS. Chapter 4 provides an overview of these regulations addressing liability rules insofar as UAS operators and remote pilots must be aware of these specific rules. Chapters 6–16 illustrate that there is currently no *lex specialis* rule covering liability for UAS in the EU or at a national level. They do not, however, provide a complete picture as there is also international aviation law specific to contractual and third-party liability. This chapter, therefore, discusses whether existing treaty rules apply to UAS operations and, if so, to what extent and whether they are suitable for unmanned activities.

Despite being established under public international law, the treaties discussed in this chapter are generally considered as falling within the scope of private international air law, as they regulate disputes between private parties, among others, by regulating the applicable levels of compensation in disputes between passengers and airlines. The international liability regime can be divided into two core areas.² First, contractual air carrier liability regulates the carrier's liability in the event of:

¹ See, e.g. the work of the European Group on Tort Law, <http://www.egtl.org/publications.html>. Accessed 1 May 2023.

² See, for a more detailed review of the international air law liability regimes and their applicability to UAS operations, Dries Deschuttere and Charlotte Thijssen, 'Civil Liability Issues in International Transport', in Benjamyn I. Scott, *The Law of Unmanned Aircraft Systems*, Second Edition (Wolters Kluwer, 2022); and Pierre-Frédéric Siaud, 'The Liability Regime for the Transportation of Goods

- death or injury to a passenger;
- destruction, loss or damage to a passenger's luggage;
- destruction, loss or damage to cargo; and
- delay suffered by passengers or their baggage, or to cargo.

Liability for such losses is mainly regulated by the 1999 Convention for the Unification of Certain Rules for International Carriage by Air (Montreal Convention),³ which is discussed in Section 2. Section 3 covers third-party liability, which addresses damage to persons or property either in the air or on the ground, for instance, in relation to the UAS falling from the sky and impacting with a third party. Liability for such losses is mainly regulated by the 1952 Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface⁴ or national law. In addition, the rules of product liability, which concern the manufacturer's liability arising from damage or injury caused as a result of a failure of their product, could be contractual or fall under tort. These sections address the scope and applicability of existing treaties to UAS. To enable a better understanding of the relationship between international law and domestic tort law, each section will also provide some historical context to the creation of the international liability regime.

2. CONTRACTUAL AIR CARRIER LIABILITY UNDER INTERNATIONAL LAW

When commercial aviation gained traction in the 1920s, many issues were regulated neither in domestic nor international law. It quickly became evident that a legal framework governing international civil aviation was necessary, including the creation of a legal framework governing air carrier liability towards air passengers. The need for an international agreement on airline liability was, among other reasons, necessitated by a need for passengers to know their rights and have access to compensation regardless of which airlines they chose or what borders they crossed. There was, therefore, a need for a global system of uniform rules. In addition to providing passengers with a standardised level of protection, an important consideration was to grant the airlines a degree of

by Drones: Is There a Need for a European Union Initiative?' (2022) 47(3) *Air and Space Law* 375–396.

³ Convention for the Unification of Certain Rules for International Carriage by Air (Montreal Convention), 28 May 1999, 2242 U.N.T.S. 309, entered into force on 4 November 2003: 139 State Parties.

⁴ Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface (Rome Convention), signed 7 October 1952, entered into force on 4 February 1958, Doc. No. 4493.

legal certainty. In the early years of international aviation, it was important to limit the liability of airlines, thereby giving them a degree of risk foreseeability. A primary motivator behind the adoption of international rules on contractual liability was, therefore, to protect an emerging industry. Without such protection, an accident, such as a crash, could have led to an airline's bankruptcy or unsustainable insurance costs.

The origins of the international agreement on airline liability are relevant for UAS operations today. As explained in the introduction of this volume, large-scale, complex commercial UAS operations are currently in their infancy and may require a similar form of protection for this nascent industry to develop and thrive. At the same time, any protection of the industry must be balanced with the interests of passengers, cargo forwarders and the general public. Manned and unmanned aviation must, moreover, be differentiated as the liability rules for manned aviation were introduced in 1929 when aviation was not as safe as today.⁵ Technological improvements and strict safety rules have vastly improved safety. At the time of writing, comparable technology or rules do not exist for UAS. The two forms of aviation are, therefore, not analogous but interconnected. As in many other fields of rapid technological development, the law must adapt. As explained below, such adaptation often occurs through the incremental development of an international treaty regime.

2.1 The Development of Contractual Air Carrier Liability

The first international treaty concerning private air law was opened for signature in 1929. This was the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw Convention).⁶ The Warsaw Convention was an attempt in the first half of the twentieth century to unify *certain* international rules concerning airlines' liability,⁷ whereby national courts were required to interpret and apply the terms of the Warsaw Convention pursuant to domestic law.

The Warsaw Convention was developed in the early years of civil aviation and has been the subject of a great deal of criticism. The limits of liability, for

⁵ See, e.g. Aviation Safety Network, 'By Period', <https://aviation-safety.net/statistics/period/stats.php>. Accessed 1 May 2023.

⁶ Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw Convention), 12 October 1929, entered into force on 13 February 1933: 152 State Parties.

⁷ Lawrence B Goldhirsch, *The Warsaw Convention Annotated: A Legal Handbook* (Kluwer Law International, 2000), 4.

example, were considered by some as being set too low.⁸ As a result, it was subject to four revisions established in subsidiary treaties, often referred to as 'Protocols'. These are:

- Hague Protocol 1955, which raised the liability limits from 125,000 francs to 250,000 francs;⁹
- Guadalajara Convention 1961, which added new clarity, such as the distinction between 'contracting carrier' and 'actual carrier';¹⁰
- Guatemala City Protocol 1971, the primary objective of which was to again raise the liability limits to 1,500,000 francs.¹¹
- Four additional Protocols were adopted in 1975 to amend and modernise the Warsaw regime.¹²

⁸ See, e.g. Bin Cheng, 'A New Era in the Law of International Carriage by Air: From Warsaw (1929) to Montreal (1999)' (2004) 53 *The International and Comparative Law Quarterly* 833–859.

⁹ Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Hague Protocol 1955), 28 September 1955, 478 U.N.T.S. 371 (1955), entered into force on 1 August 1963: 137 State Parties. The revised liability limits were still considered too low by the United States and, consequently, it did not become a party to The Hague Protocol 1955 until 14 December 2003.

¹⁰ 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 Contracting Carrier (Guadalajara Convention 1961), 19 September 1962, ICAO Doc. No. 8181 (1961), entered into force on 1 May 1964: 86 State Parties.

¹¹ Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, as Amended by The Hague Protocol (Guatemala City Protocol 1971), 8 March 1971, ICAO Doc. No. 8392 (1971). Not in force.

¹² Additional Protocol No. 1 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, 25 September 1975, ICAO Doc. No. 9145 (1975), entered into force on 15 February 1996: 51 State Parties. This changed the currency from francs to SDR; Additional Protocol No. 2 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, as Amended by The Hague Protocol 1955, 25 September 1975, ICAO Doc. No. 9146 (1975), entered into force on 15 February 1996: 52 State Parties. This converted the limits of the Hague Protocol 1955 into SDR; Additional Protocol No. 3 to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air, as Amended by The Hague Protocol 1955 and the Guatemala City Protocol 1971, 25 September 1975, ICAO Doc. No. 9147 (1975). Not in force. This set a new liability cap of SDR 100,000, amending the Guatemala City Protocol 1971 limits; and Additional Protocol No. 4 to Amend the Convention

The continuous revisions and two private initiatives¹³ aimed at modernising the Warsaw Convention were not, however, adequate. This inadequacy led to the adoption of a new treaty, the Montreal Convention, which was open for signature in 1999 and entered into force in 2003.

The main purpose of the Montreal Convention is to ‘modernize and consolidate the Warsaw Convention and related instruments’ and more broadly, the harmonisation of *certain* private international aviation law.¹⁴ However, the Montreal Convention did not supersede the Warsaw Convention and its various amendments. Rather, Article 55 of the Montreal Convention clearly states that it prevails over its predecessors when a State is a party to both Conventions. Therefore, the Warsaw Convention and its Protocols may still be relevant depending on the relevant States to the international carriage by air. The terms of the Warsaw and Montreal Convention treaties are moreover similar. As a result, where the terms are repeated, the interpretation of terms and provisions by domestic courts of both the Warsaw Convention and Montreal Convention may be considered interchangeably. This is, for example, seen in the body of case law where domestic courts have relied on cases concerning one treaty when interpreting the other.¹⁵ This chapter will, nonetheless, focus on the Montreal Convention.

for the Unification of Certain Rules Relating to International Carriage by Air, as Amended by The Hague Protocol 1955, 25 September 1975, ICAO Doc. No. 9148 (1975): 61 State Parties. This modernised and simplified the rules concerning documentation under Article 3 and following the Warsaw Convention 1929. It also set out the limit of SDR 17 per kilogramme as to liability in the carriage of cargo.

¹³ See United States and International Air Transport Association Montreal Agreement 1966; and International Air Transport Association Intercarrier Agreement 1995.

¹⁴ Preamble to the Montreal Convention 1999. Emphasis was also laid on the ‘importance of ensuring protection of the interests of consumers [...] and the need for equitable compensation based on the principle of restitution.’

¹⁵ See, e.g. Elmar Giemulla, Ronald Schmid, Regula Dettling-Ott and Wolf Müller-Rostin, ‘Convention for the Unification of Certain Rules for International Carriage by Air’, in Elmar Giemulla, Ronald Schmid, Wolf Müller-Rostin, Regula Dettling-Ott and Rod Margo, *Montreal Convention* (Kluwer Law International BV, 2022), 1–20.

2.2 Scope of Application of the Montreal Convention

2.2.1 International flights

Similar to many other treaties, the Montreal Convention only seeks to regulate international issues, *viz.* issues that affect more than one State.¹⁶ Thus, it only applies to international carriage, in principle excluding domestic carriage from its scope of application. Article 1 of the Montreal Convention 1999 states that:

This Convention applies to all international carriage of persons, baggage or cargo performed by aircraft for reward. It applies equally to gratuitous carriage by aircraft performed by an air transport undertaking.

The term ‘international’ refers to flights where the place of departure and place of return are situated within the territory of two State Parties or where their place of departure and return is the same, but there is an agreed stopping place in another State Party. Flights between two or more EU Member States are, thus, considered ‘international carriage’.

The EU UAS Regulations, discussed in Chapter 4, permit cross-border operations as long as they adhere to the safety rules. While these would be intra-EU flights, they would be considered international flights under the Montreal Convention. Further, it is envisaged that international operations will be commonplace in the future. This is in line with the European Union Aviation Safety Agency’s (EASA) Certified Category roadmap, whereby Type 1 operations would involve international operations for cargo flights. These would be international flights under the Montreal Convention, which would, therefore, apply.¹⁷

At the time of writing, the Montreal Convention has 139 Parties,¹⁸ including all Member States of the EU. In addition, it was acceded to by the EU under Regulation (EC) 2027/97,¹⁹ as amended by Regulation (EC) 889/2002.²⁰

¹⁶ See, e.g. the 1944 Convention on International Civil Aviation. For comments, see P. Mendes de Leon and B.I. Scott, ‘An Analysis of Unmanned Aircraft Systems Under Air Law’, in A. Završnik (ed.), *Drones and Unmanned Aerial Systems: Legal and Social Implications for Security and Surveillance* (Springer International Publishing, 2016), 187.

¹⁷ See Chapter 4 of this volume

¹⁸ ICAO, ‘Convention for the Unification of Certain Rules for International Carriage by Air Done at Montreal on 28 May 1999’, https://www.icao.int/secretariat/legal/List%20of%20Parties/Mt199_EN.pdf. Accessed 1 May 2023.

¹⁹ Council Regulation (EC) No. 2027/97 of 9 October 1997 on Air Carrier Liability in the Event of Accidents, OJ L 285, 17 October 1997, pp. 1–3.

²⁰ Regulation (EC) No. 889/2002 of the European Parliament and of the Council of 13 May 2002 amending Council Regulation (EC) No. 2027/97 on Air

This accession extended the scope of the Montreal Convention to ‘carriage by air within a single Member State’.²¹ Therefore, while the majority of current UAS operations are domestic and do not cross international frontiers, the terms of the Montreal Convention still apply to operations within a single EU Member State. In addition, the EU rules allow for a pilot or operator from one Member State to fly in the territory of another. This is permitted within the Open Category and the Specific Category. The permission for foreign pilots to operate across EU borders also applies to third-country pilots and operators (i.e. non-EU).

The EU Regulation covers *carriage* by any *aircraft*. In cases where the place of take-off and landing is the same (Point A to A operations), the term ‘carriage’ will require further scrutiny, but in practice, passenger and cargo transportation is likely to be minimal for Point A to Point A operations, such as recreational, sightseeing, curiosity electric vertical take-off and landing (eVTOL) flights. Thus, the Montreal Convention is relevant across the whole EU single European sky airspace,²² as well as with flights involving non-EU countries that are party to the Montreal Convention.

2.2.2 Aircraft

For the Montreal Convention to apply, the carriage must be performed by an ‘aircraft’. While the Montreal Convention does not define ‘aircraft’, it is well established in numerous domestic laws that the term includes fixed-wing aeroplanes, helicopters, balloons and gliders.²³ Documents from the International

Carrier Liability in the Event of Accidents, OJ L 140, 30 May 2002, pp. 2–5.

²¹ Elmar Giemulla, Ronald Schmid, Regula Dettling-Ott and Wolf Müller-Rostin, ‘Convention for the Unification of Certain Rules for International Carriage by Air’, in Elmar Giemulla, Ronald Schmid, Wolf Müller-Rostin, Regula Dettling-Ott and Rod Margo, *Montreal Convention* (Kluwer Law International BV, 2022), 1–20.

²² The use of ‘single European sky’ is linked to the first bullet of the Preamble to Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the Rules and Procedures for the Operation of Unmanned Aircraft, OJ L 152, 11 June 2019, pp. 45–71: ‘(1) Unmanned aircraft, irrespective of their mass, can operate within the same single European sky airspace, alongside manned aircraft, whether aeroplanes or helicopters’.

²³ Stephen Dempsey and Michael Milde, *International Air Carrier Liability: The Montreal Convention of 1999* (McGill University Centre for Research in Air & Space Law, 2005), 68.

Civil Aviation Organization (ICAO),²⁴ EU law²⁵ and several States' national laws²⁶ have concluded that unmanned aircraft are a subcategory of aircraft. Thus, pilotless aviation does not appear to produce any specific legal issues.

2.2.3 Gratuitous carriage by an air transport undertaking

The second part of Article 1 of the Montreal Convention requires further analysis. It states:

It applies equally to gratuitous carriage by aircraft performed by an air transport undertaking.

The transportation of passengers or cargo can be done for reward or gratuitously. For gratuitous carriage, this must be done by an 'air transport undertaking'. Article 1(3) of EU Regulation 889/2002 states that an 'air carrier' is an air transport undertaking with a Valid Operating Licence.²⁷ To gain a Valid Operating Licence, an operator is required to hold a valid Air Operator Certificate (AOC), which is not issued for Open and Specific Category operators.²⁸ Thus, it may be argued that the EU extension of the Montreal Convention may only be for the Certified Category; however, these rules are still pending.²⁹

²⁴ A standard definition was developed in Annexes 2, 6 and 8 to the Convention on International Civil Aviation (1944). See Amendment 43 of 2014, which modifies ICAO Annex 2 to cover UAS. Furthermore, this has been confirmed by ICAO's UAS Circular and RPAS Manual, and by the European Union in Regulation 2018/1139 and the two drone Regulations (i.e. Regulations 2019/947 and 2019/945). For more information on the ICAO documents, see ICAO, 'Manual on Remotely Piloted Aircraft Systems (RPAS)', Doc. 10019, First Edition (2015); ICAO, 'Unmanned Aircraft Systems (UAS)', Cir 328 AN/190 (2011). See also, for more information on the EU regulations, Chapter 4.

²⁵ Rita Sousa Uva and Gerli Rebane, 'EASA Regulations and the Operations of Unmanned Aircraft: An Overview', in Benjamyn I. Scott, *The Law of Unmanned Aircraft Systems*, Second Edition (Wolters Kluwer, 2022).

²⁶ Benjamyn I. Scott, *The Law of Unmanned Aircraft Systems*, Second Edition (Wolters Kluwer, 2022), Chapters 22–42.

²⁷ Regulation (EC) No. 1008/2008 of the European Parliament and of the Council of 24 September 2008 on Common Rules for the Operation of Air Services in the Community, OJ L 293, 31 October 2008, pp. 3–20, Art. 4(c).

²⁸ Obtaining a valid AOC for Open and Specific Category UAS operations could be argued to be burdensome, as the current regulations offer an acceptable level of safety in a risk-based and operation-centric way.

²⁹ See Chapter 4 of this volume

2.3 Death or Bodily Injury of Passengers

The applicability of the Montreal Convention to UAS operations appears as a logical step when passenger carriage by UAS takes off, such as with passenger air taxi services (PATS). The Montreal Convention establishes a strict liability regime in which a passenger who suffers damages from an injury caused during the flight or in the course of embarking or disembarking may claim compensation from the air carrier. Article 17(1) of the Montreal Convention provides:

The carrier is liable for damage sustained in case of death or bodily injury of a passenger upon condition only that the accident which caused the death or injury took place on board the aircraft or in the course of any of the operations of embarking or disembarking.

To assess the applicability of this Article, a four-stage test must be applied:

1. Was there an ‘accident’?
2. Did the accident cause ‘damage’?
3. Did the damage result from the death or bodily injury of the passenger?
4. Did the accident occur on board the aircraft during embarkation or disembarkation?

These questions have been subject to numerous legal disputes, and it is beyond the scope of this chapter to consider the matter in any detail.³⁰ However, eVTOL activities could raise new points. For example, if the definition of accident is taken from *Saks v Air France*, according to which it must be ‘unusual or unexpected,’ it may be difficult to assess what these mean for an emerging UAS industry.³¹ Further, the meaning of ‘embarkation and disembarkation’³² may need to be assessed for eVTOL activities due to the use of vertiports, as opposed to traditional airports, which may be smaller and more integrated into urban environments, or may even lack ground infrastructure.

³⁰ See generally Cyril-Igor Grigorieff, *Uniformity and Fragmentation of the 1999 Montreal Convention on International Air Carrier Liability* (Wolters Kluwer, 2022).

³¹ *Air France v Saks* 470 US 392 (1985).

³² See generally Pablo Mendes de Leon, *Introduction to Air Law*, Eleventh Edition (Wolters Kluwer, 2022), Chapter 4.3.7.

If a passenger sustains injuries or dies, the strict liability regime is applicable.³³ As of 28 December 2019, the limits of liability were amended.³⁴ Please see Table 3.1 below.

Table 3.1 The original and amended limits of liability under the Montreal Convention

Article	Coverage	Original limit Special Drawing Rights (SDRs)	Revised limit (SDRs)
Article 21	Death or Injury of Passengers	100,000 per PAX	128,821 per PAX
Article 22(1)	Delay	4,150 per PAX	5,346 per PAX
Article 22(2)	Baggage	1,000 per PAX	1,288 per PAX
Article 22(3)	Cargo	17 per kg	22 per kg

Source: Montreal Convention, revised per Article 24.

A carrier can escape liability above the set limit if it proves that the damage was not due to negligence of the carrier (or servants/agents), or when the damage was solely due to negligence or a wrongful act or an omission on the part of

³³ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 21(1).

³⁴ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 21(1). The sums mentioned in the Montreal Convention are expressed as Special Drawing Units, which are to be converted into the applicable currency in accordance with the method of valuation applied by the International Monetary Fund. See Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 23.

Special Drawing Rights (SDRs) are an international reserve asset created by the International Monetary Fund (IMF) in 1969 to supplement the existing official reserves of member countries. SDRs are not a currency, but rather a unit of account that is used as a reserve asset by central banks and other international organisations. They are based on a basket of major currencies, including the US dollar, Euro, Chinese Yuan, Japanese Yen, and British Pound. The value of the SDR is determined by the IMF on a daily basis, based on the exchange rates of these currencies.

a third party, or the passenger himself or herself contributed to the damage.³⁵ New business models, which differ from the traditional relationship between manufacturer, operator, vertiport operator, ground handling and others, may require more attention to the definitions of ‘servants’ and ‘agents’. Further, the use of remote pilots or artificial intelligence may also stretch the causal link between the airline and the accident.

Article 3 of the Montreal Convention will, however, require the operators to follow certain administrative steps to be compliant with the Convention. This is because it requires that a ‘document of carriage’ must be delivered to the passenger, and it must contain certain pieces of information:

- indication of the places of departure and destination, as well as the agreed stopping places, hence covering the scope of Article 1(2);
- baggage identification tag;
- written notice of the Montreal Convention.

If these are not adhered to, the provisions of the Convention will not apply, potentially exposing the air carrier to unlimited liability under the applicable national tort law.

UAS operations, such as PATS, may not be booked in the same way as manned aviation. For example, they may be booked using a mobile phone application (apps) and on short notice, to and from locations that are not airports. Thus, there may be some practical issues with fulfilling the requirements of Article 3. Initial operations are likely to be conducted between fixed points (e.g. vertiports) as opposed to *ad hoc* open sites (e.g. front garden or field), and the use of apps can easily support such information as many passengers fly on manned aviation using their app as opposed to printing the ticket.

2.4 Checked Baggage

Pursuant to Article 17(2) of the Montreal Convention, the ‘carrier is liable for damage sustained in case of destruction, loss of, or damage to, checked baggage’ provided such event ‘took place on board the aircraft or during any period within which the checked baggage was in the charge of the carrier’. In cases of PATS, this should not cause any specific legal issues. There may be some practical considerations, as the passenger may be in charge of the baggage for the whole flight, whereby they place it in the hold themselves, akin to a taxi ride rather than an airport service. Therefore, it may be excessive to

³⁵ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 21(2).

charge the operator with liability unless the damage is caused by the flight itself or the design of the aircraft.

2.5 Delay

In the event of a delay, Article 19 of the Montreal Convention prescribes that:

The carrier is liable for damage occasioned by delay in the carriage of air of passengers, baggage or cargo. Nevertheless, the carrier shall not be liable for damage occasioned by delay if it proves that it and its servants and agents took all measures that could reasonably be required to avoid the damage or that it was impossible for it or them to take such measures.

The right to compensation is not automatic, as is the case with EU Regulation 261/2004 on compensation and assistance in the event of denied boarding, cancellation and delay,³⁶ as passengers will have to prove that they experienced actual *damage* resulting from the delay. In respect of this reimbursement for the delay, the burden of proof is thus on the passenger to break the limit of liability.³⁷ UAS services may experience delay, so Article 19 is relevant. The interpretation of the Article within the context of UAS may not cause issues, but there are practical considerations. For example, a passenger of a PATS may book the flight at short notice and may be prepared to opt for another service or mode of transport if their flight is delayed. This, for example, would reflect consumer practice if current taxi services were offered by car. Further, the term ‘delay’ may need to be assessed differently by the courts as eVTOL PATS and cargo UAS services are likely to engage in shorter air services compared to current manned aviation operations.

2.6 Cargo

Regarding damage to cargo, Article 18(1) of the Montreal Convention provides:

³⁶ Regulation (EC) No. 261/2004 of the European Parliament and of the Council of 11 February 2004 Establishing Common Rules on Compensation and Assistance to Passengers in the Event of Denied Boarding and of Cancellation or Long Delay of Flights, and Repealing Regulation (EEC) No. 295/91, OJ L 46, 17 February 2004, pp. 1–8. See, Scott B.I. (2024), Passenger air taxi services: an assessment of the current European Union Rules on consumer protection for passengers, *Journal of Intelligent & Robotic Systems* 110: 1-17 (37).

³⁷ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 22(5).

The carrier is liable for damage sustained in the event of the destruction or loss of or damage to, cargo upon condition only that the event which caused the damage so sustained took place during the carriage by air.

Article 18(4) covers multimodal transport and states that the period of the carriage by air 'does not extend to any carriage by land, by sea or by inland waterway performed outside an airport'. First, if such carriage is done for loading, delivery or transshipment, then the damage is presumed to have taken place during the air carriage unless evidence is provided to the contrary. Secondly, it includes the phrase 'outside an airport'. UAS and eVTOL activities may not interact with an airport due to their operational characteristics, or they may depart and arrive from 'vertiports', which may or may not classify as 'airports'.³⁸

If, however, such carriage takes place in the performance of a contract for carriage by air, any damage is presumed to have been the result of that carriage by air. If a carrier, without the consent of the consignor, substitutes carriage by another mode of transport, such carriage is still 'deemed to be within the period of carriage by air'.³⁹ This would mean that even if a part of the carriage is undertaken by air, the Montreal Convention still applies. It is, therefore, useful to consider the rules for cargo in more detail. Chapter II of the Montreal Convention covers the documentation and duties of the parties relating to the carriage of passengers, baggage and cargo. An 'airway bill,' a document that accompanies goods shipped by air, is required. The airway bill must contain specific information and be handled in a certain way, per the Articles of the Convention. If applied to UAS, such a detailed and formalised level of documentation may be burdensome. In addition, most private individuals will not be familiar with such documentation nor the required rights and responsibilities, as the Montreal system was meant for airport-to-airport cargo delivery. The rules intended for airport-to-airport cargo delivery will, in other words, be too burdensome for drone delivery. The opposite, however, is true for the rules on loss or damage, or delays.⁴⁰ Under the Montreal Convention, for example, the carrier is liable if a consignment arrives more than seven days late.⁴¹ In

³⁸ See, Benjamyn I Scott, 'Vertiports: Ready for Take-off ... And Landing' (2022) 87(3) *Journal of Air Law and Commerce* 503–530.

³⁹ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 18(4).

⁴⁰ See, Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 18.

⁴¹ Montreal Convention for the Unification of Certain Rules for International Carriage by Air, 2242 U.N.T.S. 309; S. Treaty Doc. No. 106-45 (1999), Art. 13(3).

today's world, where many companies offer same-day delivery, seven days may be too long, especially for last-mile or short-distance delivery.

3. DAMAGE TO THIRD PARTIES ON THE GROUND

With the development of civil aviation, the potential for damage to people on the ground quickly became evident. Just as with the Montreal Convention, rules on third-party liability were a balancing act between the interests of airlines and passengers. Thus, there was a need to create a uniform level of legal protection for injured parties on the ground where an aircraft registered in one State injured people or damaged property in another State. Similar to the Montreal Convention, the aim was not just to protect the general public, but also to limit the liability to prevent bankruptcy or unsustainable insurance costs.

3.1 The Development of Third-party Liability

Third-party liability matters were considered by the *Comité International Technique d'Experts Juridiques Aériens* (CITEJA) in the 1930s, and the Convention for the Unification of Certain Rules Relating to Damage Caused by Foreign Aircraft to Third Parties on the Surface was adopted in 1933. The 1933 Convention soon needed to be amended. Amendments were introduced with the 1938 Brussels Protocol, which allowed insurers additional defences to avoid liability. As the Protocol was only ratified by two States, the amendments never came into effect.

The Second World War interrupted the further development of the international unification of private air law.⁴² This lack of development meant that there were calls to improve the 1933 Convention. At the first session of the International Civil Aviation Organization (ICAO) in 1947, the Legal Committee was requested to revise the 1933 Convention and Protocol. As a result, the Convention on Damage Caused by Foreign Aircraft to Third Parties (the Rome Convention) was opened for signature in 1952 and entered into force on 4 February 1958.⁴³ The Rome Convention supersedes the 1933 Convention.⁴⁴

Unlike the Montreal Convention, the Rome Convention has not achieved a high level of ratification. It has only been ratified by 51 States (and has been

⁴² David Hodgkinson and Rebecca Johnston, *International Air Carrier Liability: Safety and Security* (Taylor & Francis, 2016) 213

⁴³ Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, ICAO Doc. 7364/310 U.N.T.S. 182 (1952).

⁴⁴ As per Art. 29.

denounced by Canada, Australia and Nigeria).⁴⁵ It includes 10 EU Member States, *viz* Belgium, Denmark, France, Greece, Italy, Luxembourg, the Netherlands, Portugal, Spain and Sweden. The EU is not a party, and unlike the Montreal Convention, no secondary EU legislation related to the Rome Convention has been adopted. This means that the Rome Convention is not relevant across the whole EU single European sky. In fact, the lack of ratifications means that there are no harmonised rules on third-party liability. Instead, there is a patchwork of domestic and international rules, which complicates this area of private law and reduces the relevance of the Rome Convention. The following discusses the relevant rules of the Rome Convention.

3.2 Scope of Application of the Rome Convention

Article 1 states that:

Any person who suffers damage on the surface shall, upon proof only that the damage was caused by an aircraft in flight or by any person or thing falling therefrom, be entitled to compensation as provided by this Convention. Nevertheless, there shall be no right to compensation if the damage is not a direct consequence of the incident giving rise thereto, or if the damage results from the mere fact of passage of the aircraft through the airspace in conformity with existing air traffic regulations.

As with the Montreal Convention, the Rome Convention only concerns international aviation. According to Article 23, it only applies to damage ‘caused in the territory of a Contracting State by an aircraft registered in the territory of another Contracting State.’

For a UAS to fall within the scope of the Rome Convention, it must be considered an ‘aircraft in flight’. While UAS were not envisaged at the time of drafting, it is widely agreed that an unmanned aircraft is an aircraft. Therefore, if the damage is caused by unmanned aircraft, falling passengers or cargo in the case of VTOL activities, then this would satisfy the requirements of Article 1. However, as the majority of UAS operations are envisaged to be domestic, the Rome Convention will only apply to a limited number of operations. Its utility is further limited by the small number of ratifications.

⁴⁵ ICAO, ‘Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface Signed at Rome 7 October’, https://www.icao.int/secretariat/legal/List%20of%20Parties/Rome1952_EN.pdf. Accessed 1 May 2023.

3.3 Ground-based Liability

Where the Rome Convention is applicable, it is necessary to look at the specific responsibility clauses. Article 2(1) states that the liability is attached to the operator of the aircraft. Therefore, the question arises: who is the operator of the UAS? Article 2(2)(a) provides some guidance:

For the purposes of this Convention the term ‘operator’ shall 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.

In the case of general aviation, this will be the person using it personally or when that person’s servants or agents are using the aircraft. In commercial aviation, this would be the airline and not the pilot, even if they use the aircraft outside the scope of their authority.⁴⁶ Reading Article 2 alongside Article 2(2) of Regulation 2019/947 provides clarity on this within the context of UAS within the EU.

‘unmanned aircraft system operator’ (‘UAS operator’) means any legal or natural person operating or intending to operate one or more UAS.

A UAS operator could include the airline in the case of PATS, the delivery service in the case of cargo UAS, or a private person conducting recreational flights. The Rome Convention then provides clauses on defences, which have general applicability. If the operator is liable, then they shall be subject to the limits of liability in Article 11. These were set for manned aviation, which is typically heavier than unmanned aviation. Thus, it raises issues of whether the stated amounts are suitable. For example, an open category UAS could cause damage above 500,000 francs, as was the case with a Chinese lantern in the UK that caused GBP 6 million in third-party damages.⁴⁷

3.4 Inflight Collision and Interference with Commercial Air Transport

An in-flight collision between two UAS could result in anything ranging from a very low-value accident to a high-value accident in operations involving expensive aircraft or valuable payloads. A UAS could also crash into a manned

⁴⁶ Rome Convention, Art. 2(2)(b).

⁴⁷ Benjamin I Scott, ‘The First UK Conviction for the Illegal Use of an Unmanned Aircraft and How it Can Help Improve Regulations within the EU’ (2015) 14(1) *The Aviation & Space Journal* 11–22.

aircraft, or it could be carrying passengers in the case of PATS. Due to the limited applicability of the Rome Convention, a mid-air collision will generally be left to national tort law. Nonetheless, Article 7 of the 1952 Rome Convention does address the issue of mid-air crashes and specifies the following:

When two or more aircraft have collided or interfered with each other in flight and damage for which a right to compensation as contemplated in Article 1 results, or when two or more aircraft have jointly caused such damage, each of the aircraft concerned shall be considered to have caused the damage and the operator of each aircraft shall be liable each of them being bound under the provisions and within the limits of liability of this Convention.

Due to the limited applicability of the Rome Convention, the preference for national law and the limited cases of mid-air collision (e.g. *Überlingen*⁴⁸), there is a lack of case law to assess how the Article will be interpreted or applied in practice. It is therefore impossible to predict how it will be used in UAS operations.

4. CONCLUSION AND BEYOND

This chapter has shown that existing rules applicable to traditional aviation may also be relevant to UAS operations. As such, rules pertaining to death or injury to passengers under the Montreal Convention and rules on the destruction, loss, or damage to passengers' luggage or cargo may be applicable to PATS, and in a lesser case, drone delivery aircraft. Although the Montreal Convention has been widely ratified, many questions remain to be settled. On the other hand, third-party liability rules, mainly found in the Rome Convention, have only been ratified by 51 States, which does not include all EU Member States. This lack of harmonisation creates uncertainty, particularly in cases of in-flight collisions between UAS and manned aircraft.

National law will have to fill many gaps, but it does not yet provide answers to all questions related to UAS technology. A patchwork of national laws makes it challenging for UAS operations to expand their services across the EU. Some rules that apply to manned navigation may not be appropriate for UAS, and a review of their suitability is necessary.

Several existing rules, such as those requiring UAS operators to have third-party liability insurance, make sense and are clearly necessary. However, the administrative requirements of the Montreal Convention, such as the issuance of a 'document of carriage', may be burdensome for UAS operators and require

⁴⁸ See https://reports.aviation-safety.net/2002/20020701-1_B752_A9C-DHL_T154_RA-85816.pdf. Accessed 1 May 2023.

amendment. This may either happen via the specified amendment procedure of the Montreal Convention or a new practice may develop whereby State Parties apply less restrictive measures to UAS. These are but some of the issues that will arise, and this chapter is far from exhaustive.

Both the Montreal and Rome Conventions, as well as Regulation 1008, require insurance. In general, under the laws of EU Member States that wield a system of strict liability, the party liable for damages is generally the ‘operator’ of the aircraft. As the general conception is that UAS are aircraft, Regulation 785/2004 requires such operators of UAS to have third-party liability insurance with minimum levels as prescribed by this Regulation.⁴⁹

Another perspective that would merit further investigation when examining potential civil liability issues regarding the use of UAS is product liability. The provisions of EU Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products⁵⁰ needs to be transposed into the national laws of Member States. UAS manufacturers, as the producers of a UAS product, could then be held liable for putting a defective⁵¹ UAS on the market.⁵² It could also be envisaged that provisions of national law, as prescribed by the EU Toy Safety Directive, will apply to small UAS operations, for instance, with model UAS aircraft or small UAS.⁵³ This application is,

⁴⁹ Regulation (EC) No. 785/2004 of the European Parliament and of the Council of 21 April 2004 on Insurance Requirements for Air Carriers and Aircraft Operators, OJ L 138, 30 April 2004, pp. 1–6. Steer Davies Gleave, *Study on the Third-Party Liability and Insurance Requirements of Remotely Piloted Aircraft Systems (RPAS)*, Final Report 22603201 SI2.661592 (2014), 1.

⁵⁰ Council Directive 85/374/EEC of 25 July 1985 on the Approximation of the Laws, Regulations and Administrative Provisions of the Member States Concerning Liability for Defective Products, OJ L 210, 7 August 1985, pp. 29–33.

⁵¹ Council Directive 85/374/EEC of 25 July 1985 on the Approximation of the Laws, Regulations and Administrative Provisions of the Member States Concerning Liability for Defective Products, OJ L 210, 7 August 1985, pp. 29–33, Art. 6.

⁵² Council Directive 85/374/EEC of 25 July 1985 on the Approximation of the Laws, Regulations and Administrative Provisions of the Member States Concerning Liability for Defective Products, OJ L 210, 7 August 1985, pp. 29–33, Art. 9.

⁵³ Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the Safety of Toys, OJ L 170, 30 June 2009, pp. 1–37. This has been recognised by EASA in its Concept of Operations for Drones report. EASA, ‘Concept of Operations for Drones – A Risk Based Approach to Regulation of Unmanned Aircraft’, http://www.easa.europa.eu/system/files/dfu/204696_EASA_concept_drone_brochure_web.pdf. Accessed 1 May 2023.

however, beyond the scope of this research. One important issue that deserves further investigation is product liability under EU Council Directive 85/374/EEC, which holds UAS manufacturers responsible for placing a defective UAS on the market. Furthermore, the application of national law, as prescribed by the EU Toy Safety Directive, to small UAS operations may also be relevant.