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## International Aviation Law Response to Security in Relation to Unmanned Aircraft System: a Case for Effective Regulations

Manana Rodgers \*  
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### Abstract

*This article provides a reflective study on aviation security. It particularly investigates efficiency of response by international air law to security concerns in the operation of unmanned aircraft system (UAS) commonly referred to as drones. The study is based on a hypothesis that international civil aviation instruments are key in influencing regulation of security concerns arising from drones' operations at State levels. Through doctrinal research of law and literature review, the research makes three key findings. First, Second World War, Vietnam War and September 11 terrorist attacks marked paradigm shifts in the regulation of aviation security. The paper urges that the influx of drones during the COVID-19 pandemic is also a major milestone that informs need for policy changes in aviation security especially in relation to drones' operations. Second, the international law has introduced human rights-based approaches to aviation security. Besides, there have been efforts by ICAO developing Annexes and Soft laws such as Manuals and Circulars to support States regulation of drones' security. Lastly, the paper finds that existing international framework is inadequate in regulation of all aspects of security in drone operations. The authors attribute this phenomenon to low level of integration of drones into the international civil aviation. Based on the above findings, this article recommends, among others, that the international community should prioritize development of effective and binding framework for regulation of security of drone to ensure sustainability in the future of international civil aviation.*

### Introduction

International civil aviation is an enabler of global transportation and networking. As such, it is a key factor in spurring global economic growth through facilitation of international trade, creation of opportunities for work as well as facilitation of international tourism.<sup>1</sup> For these and other benefits of the aviation processes to be optimized, aviation industry must be secure and resilient to reduce vulnerability of aviation industry to security threats and instances of unlawful interferences.<sup>2</sup> Unequivocally, proper aviation security are designed to ensure that the aviation is not subjected to unlawful interference, whether malicious or inadvertent.

Aviation security is a top priority for most airlines and aviation regulatory bodies and authorities that are established at State, at regional and international levels. At the international level, various Conventions, customary international law and general principles have been developed under the auspices of the United Nations (UN) and

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and other regional and sub-regional economic communities to set global aviation security standards. The international standards are generally understood to guide States in implementation of aviation security.<sup>3</sup> The international standards, procedures and practices are meant to inspire States to harmonize their approaches to aviation security including screening of passengers, security checks, screening of cargo and airport supplies, certification of aviation security personnel and training centers,<sup>4</sup> development, audit and inspection of security systems, and approval of security programs for aviation.<sup>5</sup>

From general approaches to aviation security regulation, most global standards on personal licencing and regulation of cargo and passengers for aviation security have been tailored to address security of airports and manned aircraft. Unlike manned aircraft, unmanned aircraft systems present very salient and unique security challenges. First, unlike manned aircraft, most drones are operated remotely and do not have passengers on board. The security approaches in regards to drones do not revolve around airport, passenger or cargo security as it is traditionally known.<sup>6</sup> Secondly, drones utilize more communications and data link technologies that may be prone to cybersecurity challenges resulting from threats of attacks on the computer systems of drones. In other words, drones may be victim of security threats. In addition, if not sufficiently regulated, drones have great potential to be used for acts of unlawful interference against the civil aviation or society in general and pose significant security risk. Thirdly, drones may be easily positioned or allowed to hover in a disguised manner, while collecting intelligence in other State violating the principle of sovereignty under international law or even within the State by criminal organisations.

Proliferation of drones during the COVID-19 pandemic between 2020 and 2021<sup>7</sup> offers an appropriate moment of reflection on whether existing international regulatory frameworks for aviation can be said to sufficiently address the unique dynamics of aviation security in respect to UAS.

Structurally, the article discusses in general the regulation of aviation security, and then delves at the approaches for regulation under Chicago Convention 1944 which is specific for international civil aviation and finally analyses bodies of law specifically applicable to drones and that are developed under the auspices of International Civil Aviation Organization or and the framework existing beyond the scope of Article 44 of the Chicago Convention.

**Selected international law conventions applicable to aviation security**

Prior to the Second World War, several radio-controlled drones mostly manufactured in the United States and the United Kingdom were used for trainings, practice and other non-offensive activities. These applications are common even nowadays, under the name of 'aerial targets'. During the Second World War however, the drones equipped with TV-camera were used in battle fronts to cause security breaches.<sup>8</sup> The security concerns from drones obviously informed the prior discussions before UN was founded in 1945. This explains why the UN system approached security generally as a human right. More especially, drafters of the UN Charter 1945 provided for its recognition of human right as foundation for world peace. Specifically, Article 2 of the UN Charter 1945 obligated UN member States to ensure security within their jurisdictions according to the principle of equality.

Later, the Human Rights Committee proposed the adoption of the Universal Declaration on Human Rights that was adopted in 1948. Preambular statement of the Declaration is a restatement of the spirit of the UN Charter that human rights can help

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achieving peace in the world.<sup>9</sup> Article 3 of the Declaration was more emphatic that every person has the right security of person. Between 1948 and 1954, the UDHR's approach of providing rights of security of person could be said to be targeting control of use of drones during the Second World War albeit generally and remotely. The Declaration however represented mere aspirations since it was not legally binding on UN member States.

There was a change of trajectory in 1954 when offensive use of sophisticated drones took shape during the Vietnam War that lasted from 1954 to 1975. For example, participants in the War used drones to launch missiles, combat and in psychological operations.<sup>10</sup> Immediately after the Vietnam War ended, an expanding number of States adopted drones following the examples of the United Kingdom and the United States. The increase in offensive capabilities and number of States manufacturing and using drones had two notable impacts. First, it increased avenues for breaches of security. Secondly, it expanded the security concerns to include those of State security.

During the continuance of the Vietnam War, the International Covenant on Civil and Political Rights (ICCPR) was adopted in 1966. Article 9 of the ICCPR restates the right of every individual to security of their person. The provision is vital since it was the first statement of the right to security in a binding international instrument. To address the State security concerns, unlike UDHR, the ICCPR provides for national security as a legitimate interest upon which the limitation of any person's rights may be based.

Coming against the backdrop of the World War II and some notable occurrence during the Vietnam War, the governance framework under the ICCPR was obviously aimed to address the security issues that had been experienced in pre-1966 period. However, the provision of ICCPR on right to security to person as a human right seems to be very general and does not address specific security challenges that relate to drones such as hijacking, cyber threats, chemical, biological, radiological and nuclear plus entire security supply chain.<sup>11</sup>

Besides the international bill of rights, several attempts have been made by some international Conventions to address some security concerns arising from manned aircraft with indications in some cases that the regulatory framework may expand to drones.

In 1970 when there was an increase in aviation security breaches caused by hijackers, States that participated in the International Conference on Air Law at The Hague, Netherlands agreed to adopt a Convention to suppress such unlawful seizures. Consequently, the Hague Convention on the Suppression of Unlawful Seizure of Aircraft<sup>12</sup> came into force in 1971 in order to, among others, punish the offence of hijacking of civilian aircraft. The Convention has provisions on protection from unlawful use of force and seizures while on board an aircraft. It provides for mechanisms for conducting extraditions, reporting and criminal assistance. Article 1 of the Convention provides that:

*Any person who on board an aircraft in flight: unlawfully, by force or threat, thereof, or by other form of intimidation, seizes, or exercises control of, that aircrafts, or attempts to perform any such act, or is an accomplice of a person who performs or attempts to perform any such act commits an offence.*

The architecture of the provision of the offence of hijacking therefore appears to be restricted to security breaches that may occur physically when a person is on

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board of a manned aircraft. Unlike manned aircraft, drones are pilotless and do not have passengers on board. In respect of the drones, therefore, such interferences only take the form of hijacking which is a computer crime capable of being conducted remotely. The Convention therefore applies remotely to security concerns of most drones. A similar challenge of restriction of scope exists in other relevant treaties such as Convention on Offences and Certain other Acts Committed on Board Aircraft also Known as Tokyo Convention, 1963 whose aim is to combat crimes committed when persons are aboard an aircraft.<sup>13</sup> This may be attributed to the fact that the time the Hague Convention was adopted, the UAS technology had not been proliferated across most World States.<sup>14</sup>

About 19 years after The Hague Convention was adopted, States adopted a multilateral treaty called the Montreal Convention on the Suppression of Unlawful acts against the Safety of Civil Aviation.<sup>15</sup> This Convention was meant to regulate further security issues other than hijacking. The Convention criminalizes acts of destruction or violence against aircraft or air navigation facilities. Article 1(a) of the Convention specifically makes it an offence for a person to:

*unlawfully and intentionally: (a) perform an act of violence against a person on board an aircraft in flight if that act is likely to endanger the safety of that aircraft*

The limitation of this Convention as far as application to drones is concerned is no different from the Hague Convention's since it only provides for offences committed while on board an aircraft in flight. As the Convention does not define the term aircraft, it leaves a lot to be desired as to the extent of its application to drones.

Despite the inherent challenges of application of the several treaties, there were some glimpses of hope in the application of international security requirements to UAS in some Conventions in 1990s. For example, the Convention on the Making of Plastic Explosives, 1991 was developed for the purpose of detection, prohibition and prevention of manufacture and storage of unmarked plastic explosives.<sup>16</sup> The Convention makes no serious distinctions between manned and unmanned aircraft in its regulation of manufacturing of aircraft. It restricts the plastic explosives to individuals who are the current high number of users of drones. Even more recently, States adopted a multi-lateral treaty called the Beijing Convention for the Suppression of Unlawful Acts Relating to International Civil Aviation, 2010. In this treaty, State parties agreed to criminalize certain terrorism actions against civil aviation generally without distinction between the manned and unmanned aircraft.

Generally, it appears that the multilateral treaties that have been adopted by States across the world have espoused principles that can only apply to the drones generally, remotely and, in some cases, with modifications. The international treaty law does not however inspire hope of regulating all aspects of specific security issues dynamics of UAS. The above discussion has made a case on why there is a need to specifically regulate the security issues arising from the use of drones. The next part now turns to provide both an analysis of the aviation-specific regulatory framework and assessment adequacy in addressing all the security concern from use of drones.

#### Chicago convention 1944 and aviation security

Against the backdrop of technical development of aeroplanes during the Second World War, 55 States met in Chicago at the 1944 International Civil Aviation Conference and saw a need to develop rules on international transportation by air and to



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regulate various aspects of aircraft. This led to the adoption and signing of Chicago Convention on International Civil Aviation 1944.<sup>17</sup> The 96 Articles of the Convention lay down rules of the aviation airspace, and regulation of aircraft security and other mechanisms for sustainability. From 1947 when the Convention came into effect to date, this Convention is the foundation of international regulatory framework governing international civil aviation.

The preamble of the Convention makes reference to aviation security as necessary for a sustainable development in international civil aviation. The reference to aviation security is further amplified by the Convention which declares that the Convention was adopted against the backdrop of the need to avoid friction and promote cooperation between nations and peoples upon which the peace of the world depends. The preamble to the Chicago Convention further contemplates a future where civil aviation can foster friendship and understanding among nations. At the same time, it appreciates the civil aviation industry needs to deal with acts of unlawful interference against orderly civil aviation.<sup>18</sup> In terms of substance, Chicago Convention approaches aviation security issues in four main ways:

**A. State authority over territory**

First, the Convention reaffirms the principle of State sovereignty. Under Articles 1 and 2 of the Convention, States parties to the Convention have exclusive and complete sovereignty over their airspace within their territory on land and the adjacent waters. The supreme authority derived from the sovereignty principle donates States with power to take all steps necessary to regulate security of drone operations within their territories. One way of asserting this sovereignty is the establishment of prohibited areas for restricted access by drones from other States as per Article 9 of the Convention. This for instance is systematically progressed in the European Union (EU) based on Article 15 of Commission Implementing Regulation 2019/947.

Besides, the provisions of Chicago Convention are bolstered by the international custom of State sovereignty where every State has, to the exclusion of all other States, independent and absolute right to permit or deny access into the area recognized as its territory and similar right to control all activities within such territory.<sup>19</sup> The principle of sovereignty of the airspace, with its limitations, has been responsible for provision of requirement of special authorization to operate a UAS in the territory of another State as required under Article 8 of Chicago Convention. Also flowing from the sovereignty principle is the power of the States to register aircraft, or issue licences, certificate of airworthiness, licences, competencies in respect of aircraft under Articles 21, 30, 31, 32 and 33 of the Chicago Convention.

It is worth noting that Article 8 of the Convention requires a special authorisation any time a drone intends to cross borders in flight. Nevertheless, it also requires ICAO Contracting States to regulate small drones, which could otherwise endanger safety and security of international civil aviation, even in the absence of specific ICAO provisions on this matter, which in fact goes beyond the limits of Article 44. So far, the most noticeable implementation of this obligation to regulate small drones is the set of regulations promulgated by the European Commission, in which also security is contemplated, from both perspectives of considering the drone a potential threat or a potential victim.

The adoption of the special authorisation in international civil aviation may, however, present a negative impact on drones' regulation and integration of drones to the international civil aviation. Since the principle recognizes that a lot of issues are within the realm of the State, States may adjust their domestic laws to a manner

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that may exclude the operation of drones from some States. In order to mitigate against this challenge, there are two notable qualified exemptions to the international custom of State sovereignty.

The first exemption is the right of transit where aircraft have freedom to fly over the high seas.<sup>20</sup> In such cases, the State which registers the aircraft has threefold duties. The first is the duty of originating State to ensure aircraft exercising the right of transit or passage navigate or fly without delay through or over the passage of another State. The second is to refrain from any threat or use of force and respect the sovereignty, territorial integrity and political independence of States bordering the passage.<sup>21</sup> The third is the duty to refrain from any activities other than those that are incidental to their normal modes of continuous and expeditious transit unless rendered necessary by force majeure or necessity.<sup>22</sup>

The second exemption is the right to innocent passage. The international custom of innocent passage obliges States to allow passage necessary for maintaining international peace and security. For international civil aviation, this means a right of innocent passage for non-scheduled flights including to make stops for non-traffic purposes without seeking prior authorization unless otherwise limited for safety reasons.<sup>23</sup>

### **B. Regulation of nationality of aircraft**

Article 17 of the Chicago Convention requires that aircraft engaged in international air navigation must have nationality marks of the State in which they are registered. The rule regarding nationality of aircraft is underpinned by an assumption that aircraft has a special relationship to a particular State. In international aviation, nationality requirements make it much easier to trace drones in the air especially in circumstances where they end up intruding into territories of other States without authorization or causing other security breaches. Small drones however, being basically unable to navigate internationally, do not follow under Article 17 of the Convention. Nevertheless, the EU has established, in Article 14 of Commission Implementing Regulation 2019/947 the obligation for registration of the drone operators, even if not based on Annex 7 to the Chicago Convention on Aircraft Nationality and Registration Marks.

### **C. Prohibition of carriages and other items**

Under Article 36 of Chicago Convention, State parties to the Convention have a leeway to prohibit carriage of ammunition of war or implements of war in an aircraft over the territory of a State. The Article provides States with a further leeway to expand the list of items that are prohibited for carriage on aircraft that are flying in their territory.

### **D. Permissions and authorizations**

Lastly, Chicago Convention obliges aircraft that fly through territories of other States to obtain special permission or other authorization for such operation, which, in the case of drones, is based on Article 8 of the Convention. This ensures States are able to take action, denying the authorisation to drones that would pose a threat to aviation security. In fact, Article 8 of the Chicago Convention specifically establishes the need to obtain prior authorization and permission before operating a pilotless aircraft over the territory of another States. The interpretation is that drones are always 'pilotless', since the pilot is never on-board.

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## E. Summary

A reading of Chicago Convention indicates that State Parties to the Convention recognized the need to regulate the drones as early as 1940s. However, to date, existing international regulatory framework for drones is still at its embryonic stages. The design and substance of provisions of Chicago Convention continue to be still inapplicable to drones in several respects. For example, the rules on nationality may not be applicable to drones because drones are more attached to the manufacturers than to the States. Secondly, drones may be too small to affix identification marks. Overall, these setbacks may derail implementation of nationality requirements especially through identification marks and height requirements, which are not easy to achieve in case of drones.

The next part of the paper now aims to evaluate how the framework under Chicago Convention has enabled the flexibilities to regulate the security aspects of drones.

**Regulatory frameworks developed under auspices of ICAO**

The Chicago Convention established International Civil Aviation Organization (ICAO) as a specialized agency with ICAO Assembly and ICAO Council as its key organs.<sup>24</sup> ICAO is mandated to oversee the implementation of the Convention by ensuring the achievement of uniformity in regulation of international civil aviation, organization and procedures including on security issues.<sup>25</sup>

Article 37 of the Chicago Convention provides that ICAO should deliver its mandate through development of International Standards, and Recommended Practices (SARPs). Additionally, Article 44(b) of the Convention specifically obligates ICAO to encourage the arts of aircraft design and ensure aviation operation for peaceful purposes. In terms of implementation, Article 37 of the Chicago Convention obligates States to adhere to SARPs, procedure and organization related to aircraft engaged in international air navigation. The SARPs are designated as Annexes to the Chicago Convention and developed by ICAO Council on a number of issues including registration and licencing of aircraft.<sup>26</sup> Currently, ICAO has developed 19 Annexes to the Chicago Convention.

**A. ICAO Annex 17 on security**

ICAO Annex 17 on Safeguarding International Civil Aviation against Acts of Unlawful Interference is a specific Annex to the Chicago Convention that addresses minimum-security standards, also related to the display of aircraft marks based on Annex 7, to indicate appropriate nationality and registration.<sup>27</sup> Standard 2.1.2 in Annex 17 provides that:

*Each Contracting State shall establish an organization and develop and implement regulations, practices and procedures, to safeguard civil aviation against acts of unlawful interference taking into account the safety, regularity and efficiency of flights.*

Standard 3.1.1 of Annex 17 also provides that:

*Each Contracting State shall establish and implement a written national civil aviation security programme to safeguard civil aviation operations against acts of unlawful interference, through regulations, practices, and procedures, which take into account the safety, regularity and efficiency of flights.*



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The ICAO Annex 17 places the overall responsibility for aviation security on the operators of airlines. As a result, they are required to develop security programs that are compatible with the program of the airport operators. One main aspect of the approach by ICAO is recognition that absolute aviation security cannot be achieved. It recognizes however, that States ought to put in place very robust plans and measures to uphold security measures within the country and specifically the aerodromes.

Annex 17 is complemented by ICAO Security Manual Doc 8973 on Safeguarding Civil Aviation against Acts of unlawful interference. Such Manual obligates States to ensure security of passengers, crew and ground personnel. This means that appropriate civil aviation authorities are mandated to establish a National Civil Aviation Security Committee (NCASC) that will oversee several programmes such as National Civil Aviation Security Programme, (NCASP), National Civil Aviation Security Quality Control Programme (NCASQCP), and National Civil Aviation Security Training Programme (NCASTP).<sup>28</sup> Such provisions only apply to drones flying international IFR routes in the scope of Article 44 of the Convention. Small drones used in domestic operation are excluded. However, nothing prevents States, if so wished, to include also small drones in respective regulations on security. This has been the case in the EU, through Regulations 2018/1139, which establishes European Aviation Safety Agency and Regulations 2019/881 establishing European Union Agency for Cybersecurity.

Through its power to amend SAPRs under Article 37 of Chicago Convention, ICAO Council adopted amendment 10, of Annex 17 in 2001 to deal with new and emerging security crimes in civil aviation such as use of aircraft as a weapon of mass destruction that happened on September 11, 2001 in New York. The Amendments bolsters the originally intended means of protection of aircrafts. It specifically calls for the information sharing and improvement of response to cases of unlawful interference.

Further, ICAO Annex 17 is complemented with security procedures contained in ICAO Security Management System (SECMS) and Global Aviation Security Plan. Additionally, these efforts have been complemented with International Air Transport Association (IATA) that has come up with several strategies and security initiatives to guide the international commercial air transport sector.<sup>29</sup>

Overall, the ICAO Annex 17 is the basic framework for the protection of the UAS from illegal seizure since it is binding on contracting States. Its mode of implementation and monitoring may however be inefficient in the drones' regulation for two main reasons. First, the congruence of the security programmes with the airport plans is impossible for most UAS that are usually launched from remote places including high seas and not necessarily from airports. Second, the mechanism for protection under the ICAO Annex 17 may be difficult to implement with respect to drones whose volume of operations is increasingly, including for domestic private operations to which the Annexes to the Chicago Convention do not entirely apply.

### B. ICAO Circular 328-AN/190

Against the backdrop of lack of specificity in international law, regulating drones' operations especially after the September 11 attacks, ICAO developed ICAO Circular on Unmanned Aircraft Systems (UAS Circular 328-AN/190) published in 2011 as a guidance document for ICAO member States to develop initial UAS regulation. The Circular specifically recognizes that drones are indeed aircraft and hence a new component of the aviation system that the international aviation industry is moving towards, appreciating, defining and ultimately integrating.<sup>30</sup>

Section 4.10 of the Circular provides that there should be a basis for a permit system

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that can be used also to regulate security concerns of UAS. It gives member States to Chicago Convention freedom to permit drones both to and from designated aerodromes without any discrimination of national or foreign registration of the aircraft.

Further, Sections 5.32 to 5.36 of the Circular address specific security concerns arising from drones' operations. The sections invite States to ensure that drones are protected from unlawful malicious interference. Secondly, it invites States to apply similar standards existing in the international aviation industry to drones including personnel background checks. Additionally, the Circular guides States to regulate the cybersecurity concerns of drones by tackling threat of hacking of communication and data links of drones.

Various political authorities and regulatory agencies in the world have been inspired by this ICAO circular and consequently developed a concept of regulation of drones guided by the following principles. At the first place there is the principle of responsibility. Operation of UAS involves novel technologies, hence the need to create mechanisms that would ensure responsibility and accountability in design, manufacture, maintenance and operations, equal to those of manned aircraft, even though the person in command is on ground.<sup>31</sup> Despite existence of completely autonomous missions, the human factor would still be a requirement, just as in manned aircraft.<sup>32</sup> It is expected that UAS missions will still need persons who are accountable, regardless of whether they are called commander or pilot. From a legal perspective, action must be taken against persons responsible for operations, in case of foul play.

Secondly, there is the principle of transparency addressing the ability of all operators of aircraft, manned and unmanned, to have equal access to the use of the national airspace.<sup>33</sup> That would mean that their security concerns must be addressed with same level of, if not equal, attention. Thirdly, there is the principle of fairness envisaging that there should be a balance between regulatory compliance between UAS and manned aircraft.<sup>34</sup> Fairness in the context of UAS regulation implies, therefore, that unique security concerns of the two categories of aircraft need to be acknowledged, including how to apply regulations that are even beyond the scope of manned aircraft. Lastly, there is the principle of equivalence. The principle requires that regulations applicable to manned aircraft should be equal and the same as those for UAS for comparable risk of operations. The main idea in the principle, therefore, is that application should not be stricter to manned aircraft than UAS and vice versa.

These principles have been embedded in EU through Commission Regulations 2019/945, 2019/947 and 2021/664. Courses in English on such matters in EU are offered at the JAA-Training Organisation.<sup>36</sup>

The implementation of the guidance in the Circular may however be challenging outside the EU. First, drones may land in remote areas where airport personnel have no access or capacity to determine charges thus becoming difficult to regulate. Therefore, police or similar law enforcement agencies should be engaged. Further, the ICAO Circular is a guidance document only and, unlike Annex 17, is non-binding on any State party to Chicago Convention. Without considering it as an Annex, it remains a document subject to the good will of State parties to develop their own domestic regulation yet drones may fly across borders. Therefore, the Circular ends up as a document which cannot inspire integration of drones in the international aviation field.

This need was also perceived by the ICAO Secretariat, which, in March 2021<sup>37</sup> informed the RPAS Panel that the Secretariat had conducted outreach and coordination activities with numerous ICAO expert groups, including many of the Panels

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under the Air Navigation Commission (ANC), as well as other groups outside the ANC remit, including the Aviation Security Panel (AVSECP). These meetings allowed the RPAS Secretariat to raise awareness of other groups on ICAO's work regarding unmanned aviation, maintain efficient two-way communication channels, and flag the need for said external groups to start working with RPASP on the identification and possible development of ICAO provisions in their respective areas of expertise, which include Annex 17. In fact, the AVSECP already contributed to development of new Part IV (International RPAS Operations) of Annex 6, which includes draft security standards addressed to the RPAS operator, to the State of the Operator, but also to providers of external safety-critical services.

**Conclusion and recommendations**

Even though Article 8 of Chicago Convention recognizes the regulation of security, concerns for drones, the architecture of the Convention and other international laws may not apply directly to drones unless modified or amended or complemented at regional level, possibly based on recommendations by the Joint Authorities for Rule-making on Unmanned Systems (JARUS).<sup>38</sup> The specificity of its international regulatory framework for security issues from drones is still a work in progress since drones represent a fairly new component of the aviation system in some developing jurisdictions. The paradigm changes in drones' development and regulation have been influenced by the Second World War, Vietnam War and September 11 attacks. The proliferation of drones during the COVID-19 pandemic should be a turning point for the international community to give ICAO Circular 328-AN/190 provision on security a force of law. What commends itself to us is that State parties to the Chicago Convention should actively domesticate international Conventions and instruments relating to security and operations of unmanned aircraft system to facilitate integration of drones in the aviation sector. Secondly, ICAO Council should trigger serious discussion on UAS in terms of the UAS Circular to give its provision on security of drones' operation a force of law. Meanwhile, guided by JARUS, developing States around the world may consider the model of the EU regulations on small drones beyond Article 44 of the Chicago Convention, which represent the most advanced state of the art in 2021.

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<sup>1</sup> ICAO, Aviation Benefits Report 17-18 (2019).

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<sup>3</sup> IATA, *supra* n. 4.

<sup>4</sup> European Union, Mobility and Transport (1 July 2021), [https://ec.europa.eu/transport/modes/air/security\\_pt](https://ec.europa.eu/transport/modes/air/security_pt).

<sup>5</sup> Kenya Civil Aviation Authority, Aviation Security (2 July 2021) <https://www.kcaa.or.ke/safety-%26-security-oversight/aviation-security>.

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- <sup>14</sup> IWM, *supra n. 12*.
- <sup>15</sup> *Montreal Convention on the Suppression of Unlawful Acts against the Safety of Civil Aviation 1990*.
- <sup>16</sup> See J Trahan, 'Terrorism Conventions: Existing Gaps and Different Approaches' 8 *New English Journal of International and Comparative Law* 215.
- <sup>17</sup> ICAO, *History of ICAO and the Chicago Convention (8th July 2021)*, <https://www.icao.int/about-icao/History/Pages/default.aspx>.
- <sup>18</sup> *Chicago Convention 1944*, art 4.
- <sup>19</sup> Jean L. Cohen, *Whose sovereignty? Empire versus International Law*, 18 *Ethics & International Affairs* 3 (2004), p. 2.
- <sup>20</sup> Elihu Lauterpacht, *Freedom of Transit in International Law*, 44 *Transactions of the Grotius Society* (1958), p. 313.
- <sup>21</sup> Elihu, *supra n. 22*.
- <sup>22</sup> Said Mahmoudi, Customary international law and transit passage, 20 *Ocean Development & International Law* 2 (1989), pp. 157-174.
- <sup>23</sup> Said, *supra n. 24*.
- <sup>24</sup> *Chicago Convention*, art 43.
- <sup>25</sup> ICAO, *supra n. 19*.
- <sup>25</sup> *Chicago Convention*, art 54(m).
- <sup>27</sup> *Chicago Convention*, arts 17-19.
- <sup>28</sup> ICAO Annex 17, Standard 2.1.2.
- <sup>29</sup> IATA, Aviation Security (8 July 2021), <https://www.iata.org/en/programs/security/>.
- <sup>30</sup> ICAO Circular 328-AN/190, foreword.
- <sup>31</sup> ICAO Circular 328-AN/190, s 5.32 - 5.36. See also Joint JAA/ EuroControl UAV Task-Force Final Report: A Concept for European Regulations for Civil Unmanned Aerial Vehicles (UAVs) (11<sup>th</sup> May 2004), p. 13.
- <sup>32</sup> Jones Ingham et al, *Consideration for UAV design and Operation in South African airspace*, 110 *The Aeronautical Journal* 11 (2006), p. 23.
- <sup>33</sup> See Joint JAA/ EuroControl UAV Task-Force Final Report: A Concept for European Regulations for Civil Unmanned Aerial Vehicles (UAVs) (11th May 2004), p. 13.
- <sup>34</sup> EuroControl UAV Task-Force Final Report, p. 12.
- <sup>35</sup> EuroControl UAV Task-Force Final Report, p. 13.
- <sup>36</sup> JAA Training Organisation, Course and Examinations (25 July 2021), <https://jaato.com/courses-examinations/?cat=18>
- <sup>37</sup> Final Report of the 17th meeting of the RPAS Panel,
- <sup>38</sup> Joint Authorities for Rulemaking on Unmanned Systems, What's JARUS (25 July 2021), <http://jarus-rpas.org/>.

## Air Passenger Data Protection in China: Status Quo, Challenges and Suggestions

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### Abstract

*In the digital era, air passenger data is facing the challenges of increased circulation, vulnerability of being stolen and complexity of data processors. This article analyses the recent development of China's legislation on air passenger data protection and elaborates the imperfections of existing laws and regulations on the basis of a review of the Pang Case. At last, it aims to provide some suggestions including refining the existing legal framework, defining the scope of air passenger data and air passengers' legal data rights, and lightening the air passengers' burden of proof.*

### Introduction

The development of technology brings not only convenience to people, but also unprecedented challenges to personal data security.<sup>1</sup> Disclosure of air passenger data frequently happens in China in the digital era; in this regard, an important case is represented by Pang Lipeng v. China Eastern Airlines Co., Ltd. and Beijing Qunar Information Technology Co., Ltd. Case of Dispute over Right of Privacy (hereinafter the 'Pang Case').<sup>2</sup> Cybersecurity Law of the People's Republic of China (hereinafter 'Cybersecurity Law'), Civil Code of the People's Republic of China (hereinafter 'Civil Code'), Personal Information Protection Law of the People's Republic of China (hereinafter 'Personal Information Protection Law') are the most recent progress related to data protection in China,<sup>3</sup> but the fragmentation of laws and regulations on air passenger data protection is still severe. In addition, the scope of air passenger data and air passengers' legal data rights are not yet clear enough, the distribution rule of burden of proof to some extent increases the difficulty in protecting air passengers' legal data rights as well. How to protect air passengers' legal data rights has been a much-discussed topic. This article reviews the Pang Case briefly and elaborates the status quo and challenges on air passenger data protection in China, followed by the analysis of current China's legislation, then aims to point out the current legislation's imperfections and corresponding suggestions to protect air passenger data.

### Pang Case in a nutshell

On October 11th 2014, the applicant, Pang Lipeng, entrusted his assistant Lu Chao to book an air ticket of China Eastern Airlines Co., Ltd. on the website run by Beijing Qunar Information Technology Co., Ltd., and the agent of the ticket was Changsha Xinglv Ticket Agency. On October 13rd 2014, Pang received a text message from an unknown number, which said that the booked flight had been cancelled due to mechanical failure. Lu therefore called the customer service of Eastern Airlines for verification and the customer service agent confirmed that the flight was supposed to operate as scheduled and suggested that the text message Pang received should be a fraud one.

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On October 14th 2014, the customer service of Eastern Airlines sent a notification text message to Pang and notified him of the adjustment in the flight time. Lu recognized that, however, he had not used Pang's mobile phone number during the whole purchase process. Pang then filed a lawsuit in front of the People's Court of Haidian District, Beijing Municipality and claimed that his name, mobile phone number and flight information were disclosed by Qunar Company and Eastern Airlines.<sup>4</sup>

The Pang Case is a mirror of status quo and challenges on air passenger data protection in China nowadays, including the increased circulation and quantities of air passenger data, the complexity of data processors and the air passengers' limited capability for proving the wrongdoer, who caused the leakage, and the causation, which will be discussed in detail in the following sections.

**Status quo and challenges regarding air passenger data protection in China  
Global character of civil aviation increasing the circulation of air passenger data**

The Belt and Road Initiative has witnessed the vigorous expansion of Chinese airlines' international route network. In 2019, the total number of passengers carried on scheduled international air services operated by Chinese airlines was equal to 74.2543 million, with an increase of 16.6% over with respect to 2018.<sup>5</sup> Given the international nature of air services, air passenger data inevitably flows from country<sup>6</sup> to country, that is, in the process of purchasing tickets of Chinese airlines, foreign air passenger data flows into China, and vice versa, realizing the circulation of air passenger data.

The increased circulation of air passenger data puts forward higher requirements for airlines' data access and transfer,<sup>7</sup> as it happens for example for Chinese airlines operating the China-Europe routes. In such cases, EU General Data Protection Regulation (hereinafter 'GDPR') applies and any infringements result in the application of severe penalties. The enforcement of GDPR therefore tightens the air passenger data protection requirements to airlines.

**Possessing quantities of air passenger data making civil aviation industry the attack target**

Civil aviation industry collects massive air passenger data, which may lead to a relevant direct or indirect commercial value. Some infringers even sell or buy the air passenger data, at a value of 20 yuan to 50 yuan for each, in China,<sup>8</sup> therefore posing grave danger to air passenger data security.

As for the flight booking system, China TravelSky Holding Company Limited provides technical support to nearly 30 domestic airlines, 200 regional and overseas airlines, and 7,000 ticket agents.<sup>9</sup> The detailed air passenger data therefore can be found on the computer reservation system (CRS) or, informally, the eTerm.<sup>10</sup> There is a large number of advertisements for renting the eTerm on the Internet, with the price ranging from 100 yuan to 3000 yuan per month. The low threshold on cost and technology threatens the air passenger data security.

**Complexity of data processors increasing the difficulty to prove the infringement**

Under current ticket booking system, airlines are just one stage of the air passenger data flow, which includes Online Travel Agency (OTA), Passenger Service Systems (PSS), airports and other aviation entities. On each stage there is the possibility of data leakage, therefore it is difficult for air passengers to identify the effective infringer.

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In cases like the Pang Case, air passengers, with limited capability to gather evidence, are usually disadvantaged, which makes them more likely lose the lawsuit since they are unable to prove the wrongdoer, who caused the leakage, and the causation. For example, in the first instance of the Pang Case, the plaintiff, Pang Li-peng, lost because the evidence he provided was not enough to conclude that the data leakage was caused by the defendant.<sup>11</sup> Since the air passenger data may be leaked on each stage of the data flow, it is more difficult for the victim to prove the defendant's infringement and the causation between such infringement and damages.

**China's legislation on air passenger data protection  
Defining the scope of personal information**

As a milestone in China's efforts to create stringent guidelines on cyber governance,<sup>12</sup> Cybersecurity Law defines the scope of personal information in Article 76, which states that personal information is all kinds of information recorded in electronic or other forms, and that can be used independently or in combination with other information, to identify a natural person. Personal information includes but not limits to name, date of birth, identity certificate number, biology-identified personal information, address and telephone number.<sup>13</sup> The term 'including but not limited to' in Article 76 of the Cybersecurity Law indicates that the information with identifiability and subject relativity is in the scope of personal information, even if it is not listed in Cybersecurity Law. In addition, Civil Code adds three types of personal information to the previous types of personal information listed in Cybersecurity Law's definition, namely e-mail address, health information and whereabouts information.<sup>14</sup> Such definition reflects the identifiability and subject relativity of personal information, i.e., personal information must be related to data subjects, and can be distinguished from others.

Civil Code, which came into force in 2021, is the first-ever Civil Code in China. Chapter VI 'Right of Privacy and Protection of Personal Information' contains regulations on personal information rights of natural persons and obligations of information processor. It also makes a difference between 'personal information' and 'privacy', and more specifically it states that 'private information in personal information shall be governed by the provisions on privacy right; where there are no provisions, the provisions on the protection of personal information shall apply'. The regulations on personal information protection in Civil Code provide a legal basis for natural persons, data processors and public authorities to manage and use personal information.

**Prescribing the 'informed consent principle'**

On October 21st 2020, Standing Committee of the National People's Congress solicited public opinions on Personal Information Protection Law (Draft), which is the first law focusing on personal information protection in China. In addition, China unveiled its second draft of this law for public comments on April 29th 2021. On August 20th 2021, China's 13th Standing Committee of the National People's Congress passed the Personal Information Protection Law, which will become effective on November 1st 2021.

As China's first comprehensive data protection law, Personal Information Protection Law provides legal basis for frontier issues including facial recognition, data leakage, automated decision making and cross-border data transmission. The second draft version made significant modifications in order to face the new challenges to personal information protection, including the content of 'informed consent principle'.

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The ‘informed consent principle’ is one of the core data processing principles in the two draft versions and the final version, which regulates that first, consent to the processing of personal information shall be expressed by individuals voluntarily and explicitly on the premise of being fully informed;<sup>15</sup> secondly, an individual has the right to withdraw his or her consent;<sup>16</sup> and thirdly, the data processor cannot refuse to provide products or services on the ground that the individual does not consent or withdraws the consent.<sup>17</sup> Specifically, the ‘informed’ element fully protects the data subjects’ right to know, while the ‘consent’ element protects their right to make decisions on the personal information independently. Personal Information Protection Law clarifies the principle of impact minimization for processing of personal information and emphasizes the importance of the consent of data subjects, in particular it requires that such consent is necessary for disclosure of personal image and identification information collected by image collection and identification devices installed at public places to the public.<sup>18</sup> With respect to the consent withdrawal, the second draft version provides more detailed instructions than the first one. Article 16 of the second draft indeed requires data processors to provide a convenient way for data subjects to withdraw their consent, and such withdrawal will not affect any processing activity that took place before the consent is withdrawn.

**Regulating air passenger data protection in separate chapters**

Civil aviation industry depends strongly on a complex data network.<sup>19</sup> To protect air passenger data security, Civil Aviation Administration of China (hereinafter ‘CAAC’) has issued Interim Provisions on Civil Aviation Data Network Security Management (Draft for Comments) (hereinafter ‘Provisions on Data Security Management’), which are based on Interim Administrative Measures for China Civil Air E-tickets and Guidance on the Implementation of Classified Security Protection of Civil Aviation Data System.

Provisions on Data Security Management, aiming to establish a solid civil aviation data network, regulate the protection of air passenger data from the institutional and technical aspects, mainly including the provisions on air passenger data protection, and those related to the access and transfer of air passenger data. It also regulates the ‘principle of lawfulness, justification and necessity’ in the chapter of Air Passenger Data,<sup>20</sup> which requires CAAC and all the airlines, airports and related companies to establish the air passenger data protection system, and to take corresponding measures to protect all the data accessed in the process of air traffic. Disclosing or tampering with any data collected or stored is forbidden, and without consent of data subjects, no personal data shall be illegally provided to any other person.<sup>21</sup> This chapter also states that an agreement on the scope of air passenger data and corresponding protection obligations shall be reached before the transfer of air passenger data.<sup>22</sup>

The chapter of Air Passenger Data in Provisions on Data Security Management is a breakthrough of the air passenger data protection, since it helps to clarify the obligations of all stakeholders for the air passenger data protection. This document, unfortunately, is only a draft for comments so far and the official copy has not been promulgated yet.

**Stipulating the obligations of air passenger data processors**

Air passenger data protection has been concerned by civil aviation industry in recent years, especially after the issuance of Provisions on Data Security Management. Ministry of Transport of the People’s Republic of China has revised Rules for Aviation Safety Protection by Public Air Transport Enterprises and has issued Regulations on

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Passenger Service Management by Public Air Transport. CAAC has published Guidance on Further Improving the Quality of Civil Aviation Service and Rules for Aviation Safety Protection by Foreign Air Transport Enterprises. China Air Transport Association (CATA) has issued Business Rules on Air Transport Sales Agents.

As a programmatic document on service quality of civil aviation industry, Guidance on Further Improving the Quality of Civil Aviation Service highlights the necessity of protecting air passenger data, provides legal basis for supervision and management, and protects air passengers' legal rights with respect to data protection. Under Rules for Aviation Safety Protection by Public Air Transport Enterprises and Rules for Aviation Safety Protection by Foreign Air Transport Enterprises, public air transport enterprises and foreign public air transport enterprises must take measures in order to prevent air passenger data from being stolen or illegally leaked. The second part of Business Rules on Air Transport Sales Agents Article 5 states that the sales agents shall not disclose or leak the personal data of air passengers or ticket buyers. As set out in Regulations on Passenger Service Management by Public Air Transport, carriers, airport authorities, ground service agents, air transport sales agents, air transport sales network platform operators and aviation data companies must strictly keep air passenger data confidential and shall not disclose the data, otherwise they must take responsibilities.

The regulations above refine the protection on air passenger data from the perspectives of carriers, air transport sales agents, aviation data companies, airport authorities, ground service agents and other stakeholders, and set out the corresponding obligations of each air passenger data processor, contributing to protecting air passenger data. With the lower hierarchy of law, however, they are non-binding. These regulations therefore are not sufficient for air passenger data protection.

**Legislation imperfections of air passenger data protection in China****Fragmentation of laws and regulations on air passenger data protection**

Personal Information Protection Law will become effective on November 1st 2021. In addition, although both Cybersecurity Law and Civil Code have provisions regarding data protection, there is still a distance to systematic and standardized legislative protection for personal data in China. Complementary laws and regulations should be strengthened and perfected, such as the administrative regulations on data security, on the safety of the critical infrastructure and on the cross-border flow of personal data. Lack of complementary laws and regulations on personal data protection will also set up barriers for data subjects, data processors and regulatory authorities.

As for air passenger data protection, it can be seen in Table 1 below that more than one department is involved and the provisions are scattered in guidance, norms and suggestions issued by multiple departments. Such fragmentation causes several compliance problems for both data subjects and data processors. Furthermore, Civil Aviation Law of the People's Republic of China (**hereinafter** 'Civil Aviation Law'), with the purpose of ensuring the safety and order of civil aviation activities and protecting the legal rights and interests of all parties involved,<sup>23</sup> did not introduce data protection in its 2021 amendment, regretfully leading to a significant gap on air passenger data protection.

Table 1 Provisions on Air Passenger Data Protection in China

Title	Time	Provisions
Interim Administrative Measures for China Civil Air E-tickets	2008	Article 8 A guaranteeing enterprise shall ensure the safety and stability of its information networks and provide timely and reliable technical support for air carriers and sales agents.
Guidance on the Implementation of Classified Security Protection of Civil Aviation Data System	2015	This guidance regulates the object, purpose and process of the classified security protection of civil aviation data system.
Interim Provisions on the Licensing of the Direct Access to and Use of Foreign Computer Booking Systems by the Sales Agents within the Chinese Territory Designated by Foreign Air Transportation Enterprises	2016	Article 27 An FATE, the sales agency of an FATE, and a foreign system provider shall keep confidential the personal privacy information of passengers and the relevant materials, and may not disclose the involved personal information of passengers and any other content as agreed upon by both parties to any third party. Article 33 When conducting supervision and inspection, the civil aviation administrations may not disclose trade secrets and personal information of passengers.
Interim Provisions on Civil Aviation Data Network Security Management (Draft for Comments)	2017	Article 21 the data protection obligation of enterprises that provide Internet access services for air passengers in public places Article 28 storage of personal information and important data Article 35 air passenger data protection Article 36 requirements on data access Article 37 requirements on data transfer
Rules for Aviation Safety Protection by Public Air Transport Enterprises	2018	Article 45 Public air transport enterprises shall prevent air passenger data from being stolen or illegally leaked. Article 46 The flight booking system of public air transport enterprises should set up procedures to obtain air passenger identity documents.
Guidance on Further Improving the Quality of Civil Aviation Service	2018	This guidance underlines the secrecy of air passenger data.
Business Rules on Air Transport Sales Agents	2019	Article 5.2 air transport sales agents' obligation on air passenger data protection
Rules for Aviation Safety Protection by Foreign Air Transport Enterprises	2020	Article 37 Flight booking records shall not be provided to the public. Article 38 Foreign air transport enterprises shall prevent flight booking records from being stolen or illegally leaked.
Regulations on Passenger Service Management by Public Air Transport	2021	Article 14 Carriers, airport authorities, ground service agents, air transport sales agents, air transport sales network platform operators and aviation data companies shall not disclose, sell or illegally use or provide air passenger data. Article 61 penalty for disclosing, selling or illegally providing air passenger data

### Vagueness on the scope of air passenger data and air passengers' legal data rights

Under Cybersecurity Law and Civil Code, personal information includes name, date of birth, identity certificate number, biology-identified personal information, address, telephone number, e-mail address, health information and whereabouts information, which however cannot cover all kinds of air passenger data. Personal Information Protection Law states that personal information includes all kinds of information related to identified or identifiable natural persons that are electronically or otherwise recorded, excluding information that has been anonymized. Air passenger data shall contain flight number, seat number, frequent flyer number and other information that can identify specific air passenger separately or in combination with other information. As Table 1 shows, however, there is not a provision on the scope



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of air passenger data regarding air passenger data protection yet, and the existing terms are general, such as ‘personal data’ or ‘personal information’. The vagueness of air passenger data scope may lead to inconsistency in interpretation, which will be detrimental not only to the regulation of data processors, but also to the right protection of air passengers.

The rights of air passengers, as data subjects, shall include but not limit to right of access, right to rectification, right to withdraw, right to erasure (also called ‘right to be forgotten’), right to restriction of processing, right to data portability and right to object.<sup>24</sup> The provisions on air passenger data protection in China, however, seem to be more focused on data processors’ obligation and liability than air passengers’ legal data rights. Furthermore, Cybersecurity Law and Civil Code also do not have detailed provisions on the rights of data subjects. For example, Cybersecurity Law regulates that network operators shall follow the principles of legality, rightfulness and necessity, disclose the rules for collection and use, and obtain the consent of the data subjects. Civil Code states that the personal information shall be processed with the consent of the natural person or his or her guardian, both of which do not regulate the right to withdraw, which is represented by the data subjects’ right to withdraw consent at any time has not been explicitly stated in Cybersecurity Law and Civil Code. Although Personal Information Protection Law has provisions in respect of data subjects’ legal rights, the protection of data subjects’ rights to know and choose are still insufficient. Data processors should make more consistent efforts to increase the transparency of personal information processing and help data subjects clearly and conveniently perceive and choose their personal information processing services.

**Impropriety on the distribution of burden of proof**

Data leakage is one kind of ordinary act of infringement, therefore under Interpretation of the Supreme People’s Court on the Application of the Civil Procedure Law of the People’s Republic of China, data subjects claiming the existence of data leakage shall carry the burden of proof on the infringement, which shall be articulated as follow: first, the defendant is at fault for leaking the personal data; second, the plaintiff sustains harm because of such data leakage; and third, there is causation between the data leakage and the alleged harm.<sup>25</sup>

In data leakage cases, like the Pang Case, the plaintiff whose legal data rights have been infringed usually has limited proof capability and lacks the necessary conditions to collect sufficient evidence. The complexity of data processors, however, aggravated the plaintiff’s burden, which makes it difficult for the plaintiff to prove that the defendant is the only processor mastering his or her personal data. Such impropriety on the distribution of burden of proof is one of the reasons for the low plaintiffs’ success rate and it is therefore tough for the data subjects to protect their rights on personal data.

**Suggestions on improving air passenger data protection****Refining the existing legal framework on air passenger data protection**

Promulgating the official copy of Personal Information Protection Law was one of the legislative work plans for 2021 of the Standing Committee of the National People’s Congress.<sup>26</sup> Personal Information Protection Law is a response to the requirements of legalization, unification and refinement of data protection,<sup>27</sup> which also underscores the necessity to integrate existing guidance, norms and guidelines on air passenger data protection according to the characteristics of civil aviation industry.

For one thing, it is suggested to amend Civil Aviation Law, by introducing provision

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on air passenger data protection, stipulating air passengers' legal data rights and data processors' obligation. For another, summarizing existing guidance, norms and guidelines on air passenger data protection is also a good way to perfect the legal system on air passenger data protection. To this end, it is of great importance to eliminate the invalid provisions and officialize the interim provisions, draft for comments and trial draft in Table 1, which will contribute to constructing a comprehensive air passenger data protection system under Civil Aviation Law.

**Defining the scope of air passenger data and air passengers' legal data rights**

It would be useful to define the scope of air passenger data with specific provisions, not only for data subjects, but also for data processors. With an accurate scope of air passenger data, both data subjects and processors can decide what information belongs to air passenger data and what does not, thus they can take corresponding measures to protect such data.

In addition, another way to obtain a more complete air passenger data protection is clarifying the air passengers' legal data rights, including right of access, right to rectification, right to withdraw, right to erasure and so forth. Data processors must highlight such rights in their respective privacy clauses of contracts. Air China, for instance, has stipulated the right of access and correct, right to delete, right to change the scope of authorized consent or withdraw authorization, right to cancel the account in its privacy policy.<sup>28</sup> When formulating laws and regulations, lawmakers can take the privacy policies of data processors as a reference and further clarify the rights of air passengers.

**Lightening the air passengers' burden of proof**

The Pang Case highlights the drawback of imposing a heavy burden on the plaintiff, i.e., the air passengers. One way to protect air passenger data rights is to lighten their burden of proof, for instance, by establishing a reversal of the burden of proof. When the evidence provided by the air passenger can prove the fact that his or her personal data has been leaked, and can prove that the defendant has a high possibility of leaking the data as well, the burden of proof then will be shifted to the defendant, because of the objective conditions restricting the plaintiff's proof. And if the defendant's evidence cannot overturn the high possibility, the plaintiff's claim then can be confirmed.<sup>29</sup> Pursuant to Article 69 of the Personal Information Protection Law, if the data processor could not prove that it is without fault in respect of harm to personal data rights, the data processor will be liable for a tort and the relevant compensation. This provision reflects the current trends in the inversion of the burden of proof, which will help to protect personal data rights.

**Conclusion**

China's legislation on air passenger data protection has developed a lot in recent years, by defining the scope of personal information, prescribing the informed consent principle, regulating air passenger data protection in separate chapters and stipulating the obligations of air passenger data processors. The Pang Case, as a typical case of air passenger data leakage in the digital era, reflects that China's laws and regulations still have imperfections, such as legislation fragmentation, term vagueness and imposing a heavy burden of proof on the air passengers. To cope with the challenge of legislation fragmentation, summarizing existing guidance, norms and guidelines on air passenger data protection is recommended. Furthermore, defining the scope of air passenger data is a good way to mitigate the vagueness on the air passengers' legal data rights. In addition, shifting part of the plaintiff's burden of

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proof to the defendant can help lightening the air passengers' burden of proof and protecting their legal data rights.

## Declaration

The views expressed in this article are purely those of the author, and thus may not in any circumstances be regarded as an official position.

<sup>1</sup> De Leon, P. M. (2017). Introduction to Air Law. Kluwer Law International BV, at 2.

<sup>2</sup> The Supreme People's Court of the People's Republic of China. Pang Lipeng v. China Eastern Airlines Co., Ltd. and Beijing Qunar Information Technology Co., Ltd. Case of Dispute over Right of Privacy, available at [http://english.court.gov.cn/2019-12/04/content\\_37527755.htm](http://english.court.gov.cn/2019-12/04/content_37527755.htm).

<sup>3</sup> 'Personal information' and 'personal data' are used as synonyms in this article.

<sup>4</sup> The Supreme People's Court of the People's Republic of China. (2018). First Group of Model Cases Involving Internet Published by the Supreme People's Court.

<sup>5</sup> Civil Aviation Administration of China. Statistics Bulletin of Civil Aviation Industry Development in 2019, available at [http://www.caac.gov.cn/XXGK/XXGK/TJSJ/202006/t20200605\\_202977.html](http://www.caac.gov.cn/XXGK/XXGK/TJSJ/202006/t20200605_202977.html).

<sup>6</sup> Enerstvedt, O. M. (2017). Aviation Security, Privacy, Data Protection and Other Human Rights: Technologies and Legal Principles. Springer International Publishing, at 10.

<sup>7</sup> Nugraha, R. A. (2015). Passenger Data Protection in the European Union: The Long and Winding Road.

<sup>8</sup> Beijing Business Today. TravelSky is Deeply Involved in Air Passenger Data Leakage, available at <https://www.bbtnews.com.cn/2016/10/12/163557.shtml>.

<sup>9</sup> TravelSky, available at <http://www.infosky.com.cn/publish/english/401/408/412/index.html>.

<sup>10</sup> 'eTerm' is a ticket sales software developed by TravelSky for domestic and foreign agents and airline's overseas offices. It supports Airline System (TIPB), Agent System (TIPC3) and Departure System of airlines (TIPJ), available at <https://eterm.travelsky.cn/eterm/>.

<sup>11</sup> Liu Hai'an. (2019). Burden of Proof on Causality of Personal Information Leakage - Comment on the Case of Personality Right Dispute between Pang and China Eastern Airlines and Qunar Company (in Chinese). SJTU Law Review, (1), 184-192.

<sup>12</sup> Protiviti. China's Cybersecurity Law and its Impacts - Key Requirements Businesses Need to Understand to Ensure Compliance, available at <https://www.protiviti.com/HK-en/insights/china-cybersecurity-law-and-impacts>.

<sup>13</sup> Art. 76(5) of the Cybersecurity Law of the People's Republic of China

<sup>14</sup> Art. 1034 of the Civil Code of the People's Republic of China

<sup>15</sup> Art. 14 of the Personal Information Protection Law of the People's Republic of China

<sup>16</sup> Art. 15 of the Personal Information Protection Law of the People's Republic of China

<sup>17</sup> Art. 16 of the Personal Information Protection Law of the People's Republic of China

<sup>18</sup> Art. 26 of the Personal Information Protection Law of the People's Republic of China

<sup>19</sup> Dou, X. (2020). Big data and smart aviation information management system. Cogent Business & Management, 7(1), 1766736.

<sup>20</sup> Art. 36 of the Interim Provisions on Civil Aviation Data Network Security Management (Draft for Comments)

<sup>21</sup> Art. 35 of the Interim Provisions on Civil Aviation Data Network Security Management (Draft for Comments)

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- <sup>22</sup> Art. 37 of the Interim Provisions on Civil Aviation Data Network Security Management (Draft for Comments)
- <sup>23</sup> Art. 1 of the Civil Aviation Law of the People's Republic of China
- <sup>24</sup> Voss, W. (2016). European Union Data Privacy Law Reform: General Data Protection Regulation, Privacy Shield, and the Right to Delisting. *The Business Lawyer*, 72(1), 221-234.
- <sup>25</sup> Art. 91 of the Application of the Civil Procedure Law of the People's Republic of China
- <sup>26</sup> NPC Standing Committee Releases 2021 Legislative Plan, available at <https://npcobserver.com/2021/04/21/npc-standing-committee-releases-2021-legislative-plan/>.
- <sup>27</sup> Wang Xiuzhe. (2018). The Reconstruction of Personal Information Law Protection System in Big Data Era (in Chinese). *LegalForum*, 33(06), 115-125.
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- <sup>29</sup> Yang Lixin. (2013). Infringement of Citizens' Personal Electronic Information and the Liability (in Chinese). *Science of Law (Journal of Northwest University of Political Science and Law)*, 31(03), 147-152.

## Flight Information Region above the Indonesian Natuna and Riau Islands: Deadlock in the Realignment Efforts from Singapore

Ridha Aditya Nugraha \*

### Abstract

*The Indonesian airspace above Natuna and Riau Islands is currently controlled by Singapore. Back in 1946, the International Civil Aviation Organization delegated the air navigation service on such territory to Singapore, a decision that is currently a hot topic between Indonesia and Singapore. The negotiation for realignment, which covers complex issues ranging from defense, economic lifeline, and national security, is facing a deadlock. A status quo means the situation is in Singapore's favor rather than Indonesia's. In the end, this article provides legal and policy recommendations to find equilibrium in such airspace for the sake of a future Indonesia-Singapore good neighbourhood.*

### The State of Play: Sovereignty and Flight Information Region

Sovereignty issue in the airspace has not evolved much in the 21st century. Most aviation cases dealing with sovereignty issue are about airspace violation conducted by non-scheduled flight. The Chicago Convention of 1944<sup>1</sup> as the magna carta of international civil aviation set up a clear and round definition of sovereignty within its first two articles.

The closure of Saudi Arabia, UAE, Bahrain, and Egypt airspace for Qatar-registered airlines between June 2017 to January 2021 following the regional diplomatic crisis was another recent sovereignty issue which caught global attention,<sup>2</sup> a move that took a huge toll on Qatar Airways. During such closure, the International Civil Aviation Organization (ICAO) had been cautious not to be trapped in political issues, but rather focus on technical issues.<sup>3</sup>

There is another concept similar to sovereignty, namely Flight Information Region (FIR). It is an airspace of defined dimensions within which flight information service and alerting service are provided.<sup>4</sup> The Chicago Convention of 1944 plays a role in establishing FIR in the name of promoting aviation safety.<sup>5</sup> FIR could be expanded beyond state jurisdiction, which in some cases intersects with the airspace of other states. Thus, national claims on FIR in the context of air navigation service might overlap among each other, leading to disputed areas and ending up with tensions among states.<sup>6</sup>

As is the case with Indonesia and Singapore, the airspace above the Indonesian Natuna and Riau Islands ("Natuna FIR") is under Singapore's control. In 1946, ICAO appointed Singapore - which was still under the British control by that time - to manage air navigation services in Natuna FIR. Indonesia was still struggling to gain independence and had not become an ICAO member until 1950.

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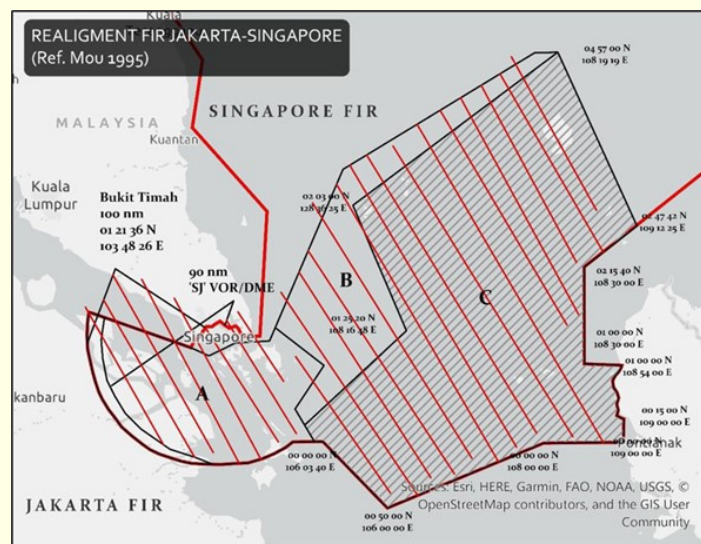


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Prior to the enactment of the 1982 United Nations Conventions on the Law of the Sea,<sup>7</sup> Indonesia was also facing the high seas doctrine which limited its airspace following the clause known as the 12-miles rule. As of today, the Indonesian airspace is seen as an integrated territory without any gap (derived from the high seas below) between the islands following to archipelagic state concept.

Efforts have been made in realigning Natuna FIR from Singapore to Indonesia. Numerous Asia-Pacific Regional Air Navigation Meetings have been held to address Natuna FIR, such as in Honolulu (1973), Singapore (1983), and Bangkok (1993) but without a positive result for Indonesia.

At presidential level, President Jokowi's last visit to Singapore in 2019 addressed Indonesia's seriousness in seeking the return of airspace above Riau and Natuna Islands which has been held by Singapore air traffic controllers for decades.<sup>8</sup> The Indonesia-Singapore Agreement of 1995<sup>9</sup> becomes the basis during current negotiation. In contrast, an argument has been raised that such agreement has not been approved by ICAO, thus it has not officially come into force. Both countries have agreed to work together as good neighbours during the realignment process. Successful Natuna FIR realignment means the airspace will be under the control of Jakarta FIR.



Picture 1 - Natuna FIR with Reference to the Indonesia-Singapore Agreement of 1995

Two years after both leaders talked in Singapore, the realignment of Natuna FIR had not been done. Both countries, however, once recognized that FIR issue<sup>10</sup> is not about sovereignty, but merely about safety and air traffic as well as management efficiency issues; a status quo until October 2021 shows that Natuna FIR includes a multitude of multidimensional issues and definitely the sovereignty issues cannot be left behind.

#### Singapore's Trump Cards: Changi Airport and Military Training Area

The combination of aviation industry liberalization in most ASEAN Member States which lead to introduction of more low-fare airlines (or low-cost carrier) and freedoms of the air liberalization through ASEAN Open Skies have led to increasing traffic in the region.<sup>11</sup> Natuna FIR is included as well, flying Jakarta-Singapore route - and beyond through both transit points - in the busiest ones in the world.<sup>12</sup> This situation means that the air navigation service provider charges more money, which is im-

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portant to maintain their service at level playing field.

However, the income from Natuna FIR is not everything for Singapore. As a small country, Singapore relies its economic lifeline on seamless connectivity for logistics, expatriates and tourism. In 2019, around 19 million international tourists -more than three times of Singapore population - visited Singapore, which heavily relied on air transportation.<sup>13</sup> The existence of Changi Airport is vital, and logically the country shall not surrender the control of Natuna FIR to Indonesia if we cannot guarantee to provide anything for the airport's interests or even Changi itself.

The second reason Singapore defends the status quo of Natuna FIR is because the Republic of Singapore Air Force (RSAF) designated military training area. RSAF needs a room for combat training, plus the location of training area gives them the advantage of knowing the border. Singapore's control of Natuna FIR allows them to maintain its interest, with a close-by training area as bonus. However, for Indonesia, especially the Indonesian Air Force (IAF), RSAF's better knowledge of the borders means a potential threat for national security.<sup>14</sup> The adagium *si vis pacem, para bellum* feels appropriate.

The current situation is disadvantageous for IAF's fleets since they are unable to move freely within their own airspace, but to report in the sake of civil aviation safety. There have been constant objections regarding IAF's state (military) flights in lieu of civil flights.<sup>15</sup> Dialogue between the two countries should be set up to bridge this issue without waiting for any further tension.

It is obvious that Singapore's interests lie in accommodating the expansion of Changi Airport and RSAF military training area. Huge funds generated from air navigation service in Natuna FIR is also an important point, but perhaps less significant than the two former points. It is understandable that Singapore may try to maintain the status quo.

#### A Halt in Enacting the Indonesian Air Defense Identification Zone

The Government Regulation No. 4/2018 has laid a legal foundation to set up Air Defense Identification Zone (ADIZ).<sup>16</sup> In the past, specifically in the 1960s, Indonesia has enacted ADIZ following the Cold War tension but only above the Java Island and its surroundings, where the capital was located. Such enactment embodies the self-defense concept as set out in Article 51 of the United Nations Charter.<sup>17</sup>

Following the recent tensions among several ASEAN Member States with China in South China Sea regarding traditional fishing rights or the proclaimed Nine Dash line,<sup>18</sup> enacting ADIZ above Natuna Islands could become one of the options to safeguard national security. Discussions to enact ADIZ following Indonesia's archipelagic state concept have been sparked within the Indonesian Air Force (TNI Angkatan Udara) for the past few years.<sup>19</sup> The Indonesian Government Regulation No. 4/2018 allows that opportunity, but needs to halt until Natuna FIR has been realigned to the hands of Indonesia under Jakarta control.

Conformity with international law shall determine Indonesia's status within international civil aviation. It is to be reminded that ICAO Annex 11 mentions that an aircraft must be under the control of only one air traffic controller (ATC) at any time. Thus, if an aircraft is required to be in radio contact with different national security unit(s) at the same time without mutual coordination, it is considered a violation of the single control unit principle.<sup>20</sup>

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The notion that the Indonesian Government could establish ADIZ means such establishment is not mandatory, especially in the context of timeframe. Indonesia's new ADIZ should be set up through gradual establishment from one point, and steadily increases until it encompasses all of the archipelago.<sup>21</sup> This is a solution for both Indonesia and Singapore, who are currently facing numerous complex issues in the form of ongoing Natuna FIR realignment negotiation; a push in enacting the new Indonesian ADIZ as mandated by the Government Regulation No. 4/2018; and external potential conflict between some ASEAN Member States with China in South China Sea.

Hopefully, Indonesia could freely uphold the rights of self-defense when the new ADIZ is enacted, and not as a tool to solidify airspace control from Singapore during the ongoing negotiation. The case of the disputed Senkaku/Diaoyu Islands between China and Japan which involves ADIZ should be prevented in ASEAN since the very beginning.<sup>22</sup>

### Concluding Remarks and the Way Forward

Indonesia and Singapore should be honest and respect each other's interests. The airspace above Natuna and Riau Islands belongs to Indonesia, and Singapore is aware that Indonesia's air navigation service provider score and safety level score are increasing. Furthermore, the Indonesian National Search and Rescue Agency (Badan Nasional Pencarian dan Pertolongan or Basarnas) has proven its capability during the disaster of AirAsia QZ 8501 (2014), Lion Air JT-610 (2018), and Sriwijaya Air SJ-182 (2021) - namely the compliance towards ICAO Annex 12. The time has come for Singapore to return the control to Jakarta without any modification towards the current scheme (see Picture 1).

At the same time, Indonesia should guarantee and accommodate Changi Airport in maintaining Singapore's seamless connectivity, and not to solely prepare Batam Hang Nadim International Airport - which is close to Changi - for revenge on traffic allocations. Both the economic lifeline for Singapore and national security for Indonesia are two sides of the same coin: they both need to be maintained. Avoiding hostile and prolonged negotiation means more room for Singapore to talk on military training area within the Indonesian airspace; but only after the realignment takes place between two good neighbours.

As echoed within the country until September 2021, Indonesia should be aware that ADIZ above Natuna and Riau Islands cannot yet be established because the service is being provided by another state, namely Singapore. The only solution is to wait until the realignment has been done, not only in legal terms but also technically accepted. This orderliness shall be preserved, otherwise it might become a boomerang in the realignment efforts.

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The views expressed are purely those of the author. Comments should be addressed to [ridha.nugraha@prasetyamulya.ac.id](mailto:ridha.nugraha@prasetyamulya.ac.id).

<sup>1</sup> Convention on International Civil Aviation (1944) 15 UNTS 295.

<sup>2</sup> Jae Woon Lee, "Aerial Blockade in the Middle East: The Line That Must not be Crossed", *The Aviation & Space Journal* Vol. 16(4), pp. 19-22. See also <https://www.bbc.com/news/world-middle-east-55538792> accessed on 25 September 2021.

<sup>3</sup> Jae Woon Lee, *Ibid.* See also <https://english.alarabiya.net/business/economy/2017/08/01/ICAO-rejects-Qatar-s-request-to-condemn-boycotting-countries> accessed on 25 September 2021.

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- <sup>4</sup> ICAO Annex 2, Rules of the Air, Chapter I.
- <sup>5</sup> The Chicago Convention, arts. 28, 37, 44, and 68. Annex 2 and 11.
- <sup>6</sup> Ridha Aditya Nugraha, "Flight Information Region Above Riau and Natuna Islands: The Indonesian Efforts to Regain Control from Singapore", *Zeitschrift für Luft- und Weltraumrecht* Vol. 67(2), pp. 236-253.
- <sup>7</sup> United Nations Convention on the Law of the Sea, signed on 10 December 1982 and became effective on 16 November 1994. See Arts. 2(2), 3, 46, 49, and 53(2).
- <sup>8</sup> <https://www.straitstimes.com/politics/leaders-retreat-singapore-and-indonesia-agree-on-framework-to-discuss-air-space-management> accessed on 4 October 2021.
- <sup>9</sup> The Agreement between the Government of the Republic of Indonesia and the Government of the Republic of Singapore on the Realignment of the Boundary between Singapore Flight Information Region and the Jakarta Flight Information Region, signed on 21 September 1995. Ratified by the Indonesian Presidential Decree No. 7 Year 1996 on 2 February 1996.
- <sup>10</sup> <https://www.straitstimes.com/politics/leaders-retreat-singapore-and-indonesia-agree-on-framework-to-discuss-air-space-management> accessed on 4 October 2021.
- <sup>11</sup> <https://www.thejakartapost.com/news/2020/11/11/indonesia-to-have-worlds-fourth-largest-air-passenger-market-by-2039-iata.html> accessed on 4 October 2021.
- <sup>12</sup> <https://www.straitstimes.com/singapore/transport/singapore-kl-route-named-worlds-busiest-international-air-link-for-2nd-year> accessed on 4 October 2021.
- <sup>13</sup> Data compilation from <https://www.stb.gov.sg/content/stb/en/statistics-and-market-insights/tourism-statistics/quarterly-tourism-performance-report.html> accessed on 4 October 2021.
- <sup>14</sup> Chappy Hakim, *Quo Vadis Kedaulatan Udara Indonesia?*, Red & White Publishing (Jakarta: 2012).
- <sup>15</sup> Ibid.
- <sup>16</sup> The Republic of Indonesia Government Regulation No. 4 Year 2018 on National Airspace Security, signed on 13 February 2018. See art. 6(2).
- <sup>17</sup> Charter of the United Nations and Statue of the International Court of Justice, signed on 26 June 1945 in San Fransisco.
- <sup>18</sup> <https://thedi diplomat.com/2014/02/indonesias-south-china-sea-options/> accessed on 4 October 2021.
- <sup>19</sup> Dedy Susanto, "Optimalisasi Pengamanan Ruang Udara Guna Penegakan Hukum di Wilayah Udara Nasional dalam Rangka Menegakkan Kedaulatan Negara" in *Angkasa Cendekia*, (Jakarta: Dinas Penerangan Angkatan Udara, 2019), pp. 12-91. Accessed via [https://tni-au.mil.id/konten/unggahan/2019/05/ISI\\_BK\\_ANCEM\\_APRIL\\_2019\\_FINAL\\_CETAK.pdf](https://tni-au.mil.id/konten/unggahan/2019/05/ISI_BK_ANCEM_APRIL_2019_FINAL_CETAK.pdf) on 4 October 2021. See also <https://nasional.kompas.com/read/2017/04/07/20454151/tni.au.perkuat.zona.identifikasi.per?page=all#page2> accessed on 4 October 2021.
- <sup>20</sup> International Civil Aviation Organization, Annex 11, 3.5.1 and 3.5.2.
- <sup>21</sup> Ridha Aditya Nugraha, "The New Plan on Indonesian Air Defense Identification Zone", *The Aviation & Space Journal* Vol. 19(1), pp. 38-42.
- <sup>22</sup> Stefan A. Kaiser, "The Legal Status of Air Defense Identification Zones: Tensions over the East China Sea", *Zeitschrift für Luft- und Weltraumrecht*, Vol. 63, pp. 534-541.

## Sustainable Aviation: How the Sector can Cope with Major EU Environmental Goals

*Alessandra Laconi \**

### Introduction

The transport sector has been severely affected by the restrictive mobility measures that it has been necessary to adopt in order to contain the COVID-19 outbreak.

In terms of environmental sustainability, the pandemic has inevitably caused a significant decrease in air traffic<sup>1</sup> and aviation emissions. According to the latest Eurocontrol's data, CO<sub>2</sub> emissions from flights declined by a medium percentage of 57% in 2020.<sup>2</sup>

At any rate, this certainly cannot be considered as a (temporary) solution to the problem represented by the high quantity of greenhouse gases emitted by air transport. As evident, the upward growth in emissions will resume (and is likely to resume, albeit slowly) in conjunction with the recovery in air traffic demand, unless the aviation sector and governments take further measures to ensure the compatibility between the aviation sector's growth and setting climate objectives.

Several legislative processes were already underway at the EU level to support the aviation sector's decarbonization, and the recovery from the COVID-19 crisis (as known, characterized by demand shocks, supply chain disruptions, decrease in travel and tourism, reduced connectivity and difficulties for transport operators, to the point that no other industry has been so hugely affected by the COVID-19 pandemic as the air transport and tourism sector)<sup>3</sup> can represent a further driving force towards a sustainable and smart transport system, following a coordinated EU approach to transport activity and connectivity, overcoming the crisis and strengthening the EU's strategic autonomy.

It is therefore clear that these premises must be brought back to the principles established in the European Green Deal Communication,<sup>4</sup> which launched a new growth strategy for the EU that aims to transform the EU into a fair and prosperous society with a modern, resource-efficient and competitive economy, highlighting again the Commission's ambition to increase its climate targets and make Europe the first climate-neutral continent by 2050.<sup>5</sup>

From a regulatory point of view, the EU has been promoting the legislative initiative for years, in particular in the field of emission trading rules. Notably, the EU ETS is the cornerstone of the European climate policy<sup>6</sup> as well as a prototype regime with respect to all other similar experiences; the current ETS legislation was revised in 2018 to deliver a 43% reduction in EU ETS emissions by 2030 compared to 2005, coherent with an EU economy-wide emissions reduction target of at least 40% by 2030 compared to 1990.

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By far the most controversial point of the EU ETS - which raised strong reactions by air carriers - was its application to all emissions from all flights taking off from or landing in the EU, even if the carrier was a non-EU airline and even though the majority of the emissions from that flight would all be emitted outside EU airspace.

Therefore, the ETS Directive has been widely criticized by non-EU airlines and governments and has been subject to a challenge by the Air Transport Association of America before the English High Court, which was referred to the Court of Justice of the European Union (ECJ). In December 2011 the ECJ ruled that the ETS Directive was not contrary neither to the Chicago Convention nor to general principles of international law, causing more and stronger reactions, especially by non-EU carriers.<sup>78</sup>

In the light of the increased necessity and value of the European Green Deal due to the very severe effects of the COVID-19 pandemic, the European Commission recently announced proposals to update the aforesaid Directive and to implement the ICAO Carbon Offsetting and Reduction Scheme for International Civil Aviation (CORSIA), as it will be exposed below.

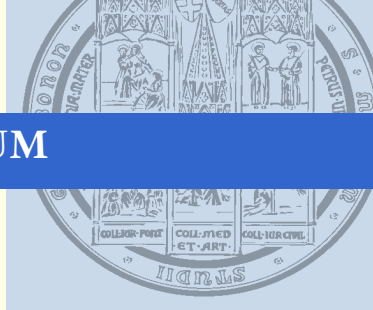
Moreover, based on the same approach, on the 9th December 2020, the European Commission presented its 'Sustainable and Smart Mobility Strategy - putting European transport on track for the future',<sup>9</sup> together with an Action Plan composed by 82 initiatives. This strategy can be considered as the foundation of the green, digital and resilient transformation of the EU transport system following the pandemic, in order to reach a 90% cut in emissions by 2050, as a main result of a smart, competitive, safe, accessible and affordable transport system.<sup>10</sup>

The strategy contained in the Communication can be defined as a transversal and multilevel study, aimed at guiding and coordinating European legislative policies in order to pursue and achieve the objectives set in terms of environmental sustainability of transport.

In a nutshell, the Communication sets out the actions required to ensure that each mode of transport can contribute to the achievement of the objectives set by the European Green Deal, i.e. reducing greenhouse gas emissions by 55% by 2030 and making Europe the first climate-neutral region in the world by 2050.

The aim of the Communication, in essence, sets an evident change of perspective, from incremental change to fundamental transformation, providing for a list of cornerstones in the form of ambitious progressive goals, in particular:

- *By 2030:*
  - *at least 30 million zero-emission vehicles will be in operation on European roads*
  - *100 European cities will be climate neutral*
  - *high-speed rail traffic will double*
  - *scheduled collective travel of under 500 km should be carbon neutral within the EU*
  - *automated mobility will be deployed at large scale*
  - *zero-emission vessels will become ready for market*
- *By 2035:*
  - *zero-emission large aircraft will become ready for market*
- *By 2050:*
  - *nearly all cars, vans, buses as well as new heavy-duty vehicles will be zero-emission*
  - *rail freight traffic will double*



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- *high-speed rail traffic will triple*
- *the multimodal Trans-European Transport Network (TEN-T) equipped for sustainable and smart transport with high-speed connectivity will be operational for the comprehensive network.*

In brief, it is necessary to make all transport modes more sustainable, making sustainable alternatives widely available in a multimodal transport system, and putting in place the right incentives to drive the transition.

In light of the above, and with particular regard to the aviation sector, it is therefore evident that key stakeholders representing EU and national policymakers, airlines, airports, technology manufacturers, air traffic control, and civil society are called to operate in an interconnected way and each to the extent of their competence, in order for the EU to become a climate-neutral economy by 2050, while also working towards a zero-pollution ambition.

### Legislative policies

With regard to the measures that can be adopted at the legislative level, and focusing on the aviation field, EU policies can be grouped in three main categories:

*1) Measures to significantly reduce the current dependence on fossil fuels (notably, by opting for low and zero emission vehicles and enhancing the use of renewable and low-carbon fuels).*

Despite its growth, the proportion of low and zero emission vehicles is still too weak. Air transport has greater decarbonization challenges in the next future, due to current lack of available zero-emission technologies, long development and life cycles of aircraft, the required significant investments in refueling equipment and infrastructure, and international competition in this sector.<sup>11</sup>

Furthermore, a decisive action is urgently needed following the current crisis, and air transport must have rapid access to additional renewable and low-carbon liquid and gaseous fuels, like hydrogen, hydrogen-based synthetic fuels and advanced bio-fuels.<sup>12</sup>

In this respect, the Commission expressed its intention to establish a Renewable and Low-Carbon Fuels Value Chain Alliance, in order to strengthen the cooperation among public authorities, industry and civil society aimed at the development and use of the most promising fuels (implementing action under the European Clean Hydrogen Alliance and European Battery Alliance).

The reduction of emissions of aircraft, together with energy efficiency and high standard design and operation must be promoted, also through a closer cooperation between the EU and the International Civil Aviation Organisation (ICAO), establishing global emission decrease goals to be read in conjunction with and in respect of the Paris Agreement (the next ICAO General Assembly will take place in 2022). Nevertheless, it is also important to invest on zero-emission aircraft technologies, provided that, with regard to civil aviation, the Communication sets the ambitious goal of making zero-emission aircraft available to the European market by 2035.

The decarbonization of aviation transport requires a favorable environment, promoting adequate carbon pricing policies, research and innovation (namely through the Horizon Europe net).

Moreover, the Single European Sky can represent the framework for a more efficient traffic management, contributing to reduce the climate impacts associated with emissions of gases other than CO<sub>2</sub> in the air transport sector.

With regard to infrastructure, the best practices followed by the most sustainable

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airports should be widespread and become the new standards to look at and encourage further sustainable connections.<sup>13</sup> The Commission will propose measures to make EU airports clean, promoting renewable and low-carbon fuels, as well as the feeding of stationed aircraft with renewable power, the project and use of new, clean and silent aircraft, the revision of airport charges,<sup>14</sup> the revision of ground operations at airports and a spread use of smart traffic management.<sup>15</sup>

Investment in renewable energy production, in fleet renewals and in sustainable multimodal access must increase, both from public and private sources.

As for aviation, improving the efficiency of air traffic management (ATM) has a great potential for modernization and sustainability, helping to reduce excess fuel burn and CO<sub>2</sub> emissions caused by flight inefficiencies and airspace fragmentation. It is therefore quite clear that the Single European Sky (SES) has to be fully implemented without delay, in order to have a modern regulatory framework and adequate digital ATM infrastructure.

The EU must therefore offer all the adequate legislative measures for the validation of new technologies and services, like unmanned aircraft for commercial applications, hydrogen aircraft, electric personal air vehicles etc. On the other hand, technology developers and start-ups would find a fruitful regulatory context for the deployment of solution in EU market.

In relation to the deployment of unmanned aircraft (drones), the Commission clearly stated its full support, in particular through the development of new rules ('Drone Strategy 2.0').

*2) Action towards more sustainable transport modes (provided that all transport modes are indispensable for EU transport system).*

Sustainable mobility alternatives must be promoted, creating an advanced EU multimodal transport system, reaching a better level of efficiency for the benefit of people and goods.

EU people are ready to opt for more sustainable, efficient, safe and affordable transport alternatives, and this can be considered a consequence of the COVID-19 pandemic and the digital solutions that have spread widely in this historical period.

On the other hand, the pandemic crisis has strongly showed that uninterrupted air, land and waterborne services are fundamental not only for the transport of goods, but also for manufacturing industries and - in general - for the proper functioning of the EU's single market.<sup>16</sup>

In light of the above, the completion of the Single European Transport Area must be accomplished, ensuring multimodality and interoperability between different transport modes.

From the perspective of modernization and smart connectivity at affordable and transparent prices, the Commission will propose a revision of the Air Services Regulation,<sup>17</sup> as well as of EU rules governing airport charges, slots and computer reservation systems.

*3) Internalization of external costs (in particular, by implementing the 'polluter pays' and 'user pays' principles, through carbon pricing and infrastructure charging mechanisms).*

It is necessary to reinforce incentives for transport users in order to obtain more sustainable choices. The main economic incentives are carbon pricing, taxation, and infrastructure charging, but there is no doubt that an enhanced and clear information to users is a fundamental complementary action.<sup>18</sup>

In particular, both the 'polluter pays' and 'user pays' principles<sup>19</sup> need to be implemented in relation to all transport ways, considering the high amount of external costs.<sup>20</sup> The internalization of these costs (to be borne by actual users) can represent

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an important measure to pursue fair and efficient pricing for all transport modes. In the aviation sector, as exposed above, the main legislative carbon pricing instrument granting the internalization of CO<sub>2</sub> emissions related costs is the EU ETS.<sup>21</sup> The Commission announced several proposals to update the EU ETS Directive (in particular, to reduce the ETS allowances allocated for free to airlines) and to implement the ICAO Carbon Offsetting and Reduction Scheme for International Civil Aviation (CORSIA).<sup>22</sup>

In fact, following the aforesaid announcement, on 14th July 2021, the Commission proposed the “Fit for 55” legislative package, providing for measures to reduce emissions by at least 55 percent by 2030, compared to 1990 levels.

This legislative package, as announced in the 2030 Climate Target Plan, is the most comprehensive building block in the efforts to implement the ambitious new 2030 climate target, and all economic sectors and policies will need to make their contribution.

The main amendments in the field of aviation can be summarized as follows:

- consolidation of the overall measure of allowances at current quantities and application of the linear reduction factor, as set out in Article 9 of the ETS Directive;
- increase of the auctioning of aviation allowances (the number of free allowances allocated to aircraft operators will be reduced progressively, with the aim of stopping free allocation to aviation by the end of 2026);
- continuation of intra-EU application of the EU ETS and application of CORSIA to extra-EU flights (flights within the European Economic Area - EEA, as well as flights to Switzerland and the UK, will continue to be covered by the EU ETS);
- equal treatment of airlines on the same routes.

A further separate proposal was made to implement Member States’ notification to EU-based airlines of the offsetting for the year 2021 under ICAO’s CORSIA, in order to reduce the administrative burden on national authorities and airline operators and provide legal certainty with regard to CORSIA offsetting by EU-based airlines. The EU ETS Directive will apply CORSIA to EU-based airlines’ emissions from flights to and from countries outside the EEA. When emissions from flights outside the EEA reach levels above 2019 they will have to be offset with corresponding carbon credits.

With regard to fossil-fuel subsidies, the Commission expressed its aim to align the taxation of energy products and electricity with EU energy and climate policies. Therefore, current tax exemptions (including for aviation fuels) have to be duly considered as part of an organic proposal.

In light of the overall global analysis offered by the Commission, following the pandemic crisis the transport sector and the mobility system must be both decarbonized and modernized, limiting their negative impact on the environment and improving the safety and health of EU citizens.

It is worth to note that the implementation of an actual variation of perspective, from incremental change to fundamental transformation, will necessarily require the full contribution from all transport actors and stakeholders, as well as a significant increase of investments from public and private sectors.

Indeed, the organic set of policies provided for in the examined Communication represents an action plan to achieve the objectives of the European Green Deal, thus - beyond the ones to be adopted at legislative level by EU institutions, Member States and their national authorities - all the concerned subjects and operators are required to participate proactively to the overall action plan established by the EU Commission.

*AVIATION***The actions required to the main stakeholders**

In the aviation field, the five associations representing aircraft manufacturers, airlines, airports and air navigation service providers in Europe<sup>23</sup> have planned a shared route to achieve the EU's goal of net zero CO<sub>2</sub> emissions by 2050, through the initiative appropriately called 'Destination 2050' to reflect the common end goal.<sup>24</sup>

The purpose of the initiative is to identify new measures and/or review existing programs under innovative and better perspectives, through which the members of the involved associations can achieve the decarbonization goal collectively.

On these premises, the involved associations asked the Netherlands Aerospace Centre (NLR) and SEO Amsterdam Economics to support them in providing the necessary scientific basis for the project. In the public full report of February 2021,<sup>25</sup> they have thus identified actions across four pillars, seamlessly from the contents of the above-examined Smart Mobility Strategy:

- aircraft and engine technology: improvements in aircraft/engine technology and fleet replacement are considered as the largest promise for decarbonizing European aviation. An adequate fleet replacement includes the introduction of a hydrogen-powered single-aisle aircraft on intra-European routes in 2035. Aircraft availability by 2035 requires technology readiness by 2027 to 2030 (for example, new technologies should be incorporated in commercial products, helped by efficient new certification for disruptive technologies);
- air traffic management and aircraft operations: these improvements are estimated to be a crucial opportunity in reducing CO<sub>2</sub> emissions in the short to medium term, so as to move towards a network-centric and digital ATM system implementing the SESAR solutions, and providing for a renewed set of key performance indicators with clearly defined accountabilities and a seamless upper airspace. Regulations and incentives should enable and encourage the rapid decarbonization of ground operations;
- sustainable aviation fuels: SAFs represent a strong contribution to achieving net zero carbon emissions in 2050, and actions must be taken to scale up and commercialize SAF deployment, providing for clear sustainability criteria and granting a diversified and sustainable feedstock base. In order to make SAF cheaper, financial incentives and the implementation of a EU wide blending obligation are required. In order to reduce cost and emissions, a monitoring and accounting framework should be implemented, so that airlines can claim the use of SAF in the most efficient way;
- smart economic measures: in the short term, smart economic measures are central in the reduction of carbon emissions from aviation. The EU ETS and the CORSIA scheme are key mechanisms to reducing carbon emissions, especially in the short term when breakthrough technologies and SAFs are not yet widely available. In 2050, any remaining emissions can be balanced by carbon removal projects.

On these assumptions, Destination 2050 shows a possible pathway that combines new technologies, improved operations, sustainable aviation fuels and economic measures.

It is noteworthy to highlight that the Destination 2050 report provides for clear recommendations to industry and governments, emphasizing on the urgent need to realize the appropriate measures leading to net zero CO<sub>2</sub> emissions from European aviation through collective policies and actions on their part, in order to avoid differentiated policies, carbon leakage and transfer of activity.



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After the exam of the Sustainable and Smart Mobility Strategy drafted by the Commission, it is interesting to point out here the recommendations to industry consistently provided in the Destination 2050 report, which can be summarized as follows:

- continue to substantially invest in decarbonization;
- develop more fuel-efficient aircraft and bring these into operation through continued fleet renewal;
- develop hydrogen-powered and hybrid/electric aircraft and associated airport infrastructure, and bring them available to the market;
- scale up drop-in sustainable aviation fuel (SAF) production and uptake;
- implement the latest innovations in ATM and flight planning;
- compensate remaining CO<sub>2</sub> emissions by removing carbon dioxide from the atmosphere.

Therefore, given the common goal, it is clear that the major stakeholders of aviation transport are called to act proactively, each to the extent of their competence.

### Conclusions

In conclusion, it is important to stress again that legislative policies and actions from all sector subjects are equally and strongly required to make the potential identified a reality. All the described improvements with respect to aircraft and engine technology, ATM and aircraft operations and sustainable aviation fuels represent substantial goals to be realized through policies and actions both from institutions and industry.

It is not pleonastic to consider that aviation is a global industry which requires global solutions.

At an international level, the ICAO work on defining global long-term goals represents an important chance for the aviation sector, which could benefit from a clear closeness of purposes between global and European objectives.

At EU level, a common long-term vision needs both a coherent policy framework and a strong collaboration between stakeholders. With regard to civil aviation, the first ambitious goal is making zero-emission aircraft available to the European market by 2035. In order to achieve this objective, the aviation sector is called to put in place as from now all the necessary efforts in terms of policies and activities, as exposed above.

One of the most effective ways to tackle the increasing emissions from European aviation is by revising the EU ETS. In the light of the illustrated Communication concerning the Sustainable and Smart Mobility Strategy, it seems that the proposed revision of the EU ETS Directive is consistent with the main objectives set by the European Green Deal and, more generally, by the Paris Agreement. All the concerned sectors will have to contribute to achieve these goals, including aviation. Such efforts must begin immediately and increase steadily. As a global leader on climate change, the EU must avoid policies that could limit its ambition, at the same time taking into account international law provisions.

Indeed, the whole question should be evaluated at a global level, within the ICAO framework, by further and jointly elaborating common sustainability objectives, in order to avoid possible inconsistencies.

Even if appropriate corrective measures and a continuous monitoring of the EU ETS functioning need to be adopted, it can be affirmed that - in the short term - smart economic measures remain fundamental: the EU ETS and the CORSIA scheme repre-

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sent key mechanisms for the reduction of carbon emissions from aviation, looking forward to a wide availability of SAFs and breakthrough technologies.

In the future, alignment with EU legislation on renewable energy and energy efficiency is desirable, in order to avoid overlapping between different policies and pursue greater system efficiency.

From an operational point of view, it is essential for investors to clearly know in advance the targets to be met and the related timing, starting from a long-term and consistent policy framework in sustainable aircraft, engine and fuels, from research and development (bringing together start-ups and spin-offs with aviation professionals) to market deployment.

Nevertheless, providing consumers with adequate information on travel sustainability can lead to more sustainable choices, spreading awareness at all levels. In this respect, awareness should be shared not only at management and executive levels, but also with operational employees, starting from pilots and air traffic control officers, to - for example - maintenance workers, ground handling agents and airport personnel in general.

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The views expressed are purely those of the author, and thus may not in any circumstances be regarded as an official position.

<sup>1</sup> See the project by the students of the lab. systems design of the master's degree course in design of the University of the Republic of San Marino, with the editorial supervision of Il Sole 24 Ore (Prof. M. Moretti), available at <https://lab24.ilsole24ore.com/traffico-aereo-coronavirus/>.

<sup>2</sup> Emissions calculated using the Eurocontrol Small Emitters Tool (see <https://www.eurocontrol.int/shared/sustainability/map-emissions.html>, where the CO2 emission percentage of each Eurocontrol Member State for 2020 is shown).

<sup>3</sup> According to Eurocontrol's data, in May 2021 air traffic decreased by 65% compared to the same 2019 period (see Eurocontrol, Comprehensive Air Traffic Assessment - Covid-19 impact on European air traffic, 5 May 2021). See also IATA, press release No. 95/2020, Deep Losses Continue Into 2021, 24 November 2020, where it is confirmed that the deep losses in the air transport sector recorded in 2020 will continue in 2021. The negative trend for the current year is confirmed by Il Sole 24 Ore (see 'Aerei, ripresa lenta. A maggio traffico passeggeri in calo del 62,7% rispetto a prima del Covid', available at <https://www.ilsole24ore.com/art/aerei-ripresa-lenta-maggio-traffico-passeggeri-calo-627percento-rispetto-prima-covid-AE7WPRV>).

<sup>4</sup> COM(2019)640 final.

<sup>5</sup> The current College of European Commissioners (2019-2024) led by Commission President Ursula von der Leyen has said that making Europe the first climate-neutral continent will be the 'greatest challenge and opportunity of our times'.

<sup>6</sup> Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, as amended by Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018, and Decision (EU) 2015/1814.

<sup>7</sup> See P. Manzini, A. Masutti, The application of the EU ETS System to the Aviation Sector: From legal disputes to international retaliation?, *Air & Space Law*, 2012, 37, pp. 307 - 324.

<sup>8</sup> The EU temporarily reduced the scope of the EU ETS to only include flights between EEA airports for the 2012 compliance year under the 'Stop the Clock' decision. It was subsequently agreed that the 'intra-EEA scope' should be extended for 2013 until 2016.

<sup>9</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 'Sustainable and Smart Mobility Strategy - putting European transport on track for the future', {SWD(2020) 331 final}, COM(2020) 789 final.

<sup>10</sup> In the Communication, the term 'vehicle' refers to all types of vehicles, including, among others, cars, lorries, buses, coaches, light vehicles, trains, aircraft, ships, boats, ferries, etc.

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- <sup>11</sup> See R. Leal Arcas, Trade Redemption: How Trade Agreements Can Help Decarbonize the Economy, in A. De Luca, V. Lubello, N. Lucifero (edited by), *The European Union renewable energy transition, with the scientific contribution of University of Florence and Baffi Center Research Unit of Law and Economic Studies*; RULES, Bocconi University of Milan, Milano, Wolters Kluwer, 2019, p. 113.
- <sup>12</sup> See D.W. Zingg, O.L. Gulder, Technology developments and Renewable Fuels for Sustainable Aviation, in A. De Mestral, P.P. Fitzgerald, M. Tanveer Ahmad (edited by), *Sustainable development, international aviation, and treaty implementation*, Cambridge, Cambridge University press, 2018, pp. 17-31.
- <sup>13</sup> See M. Mousavi Sameh, J. Scavuzzi Dos Santos, Environmental Sustainability Measures for Airports, in A. De Mestral, P.P. Fitzgerald, M. Tanveer Ahmad (edited by), *Sustainable development, international aviation, and treaty implementation*, Cambridge, Cambridge University press, 2018, pp. 62-80.
- <sup>14</sup> See ACI Europe. (2020b). Information on the use of modulations of airport charges for environmental reasons. Available at <https://www.acieurope.org/downloads/resources/ACI%20EUROPE%20Paper%20on%20Environmental%20Modulations%20of%20Charges.pdf>.
- <sup>15</sup> See COM(2020) 747 final, “Updated analysis of the non-CO2 climate impacts of aviation and potential policy measures pursuant to EU Emissions Trading System Directive Article 30(4)”.
- <sup>16</sup> In relation to the integrity of the EU’s single market, the Commission affirmed the necessity to rigorously pursue the enforcement of EU rules in the fields of competition, state aid, free movement of goods and services.
- <sup>17</sup> Regulation 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.
- <sup>18</sup> See S. Sankari, Product information on freight emissions for consumers - changing the market towards sustainability, in E. Eftestøl-Wilhelmsson, S. Sankari, A. Bask (edited by), *Sustainable and efficient transport: incentives for promoting a green transport market*, Cheltenham, Northampton, Elgar, 2019, pp. 212-229; see also S.A. Cohen, J.E.S. Higham, P. Peeters, S. Gossling (edited by), *Understanding and governing sustainable tourism mobility: psychological and behavioural approaches*, London, Routledge, 2014.
- <sup>19</sup> See Organisation for Economic Co-operation and Development, *The Polluter Pays Principle*, Paris, OECD Publishing, 2008.
- <sup>20</sup> See the study ‘Sustainable Transport Infrastructure Charging and Internalisation of Transport Externalities’ (June 2019), according to which overall charges and taxes collected from direct CO2 and air pollutant emissions, indirect CO2 and air pollutant emissions from energy production, air pollution and excessive noise and habitat damage amount to at least EUR 340 billion.
- <sup>21</sup> See V. Schade, *The inclusion of aviation in the European emission trading scheme: analyzing the scope of impact on the aviation industry*, Hamburg, Germany, Anchor Academic Publishing, 2014.
- <sup>22</sup> See M.V. Gehring, C. Robb, *Sustainable Development and Emission Trading: the EU Perspective*, in A. De Mestral, P.P. Fitzgerald, M. Tanveer Ahmad (edited by), *Sustainable development, international aviation, and treaty implementation*, Cambridge, Cambridge University press, 2018, pp. 83-107.
- <sup>23</sup> A4E - Airlines for Europe, ACI Europe - Airports Council International, ASD - AeroSpace and Defence Industries - Association of Europe, ERA - European Regions Airline Association, and CANSO - Civil Air Navigation Services Organization.
- <sup>24</sup> The study is limited to commercial flights departing from airports within the European Union (EU), the United Kingdom (UK), and the European Free Trade Association (EFTA), consisting of Iceland, Liechtenstein, Norway and Switzerland.
- <sup>25</sup> Destination 2050 - A Route To Net Zero European Aviation, NLR-CR-2020-510, February 2021, available at [https://www.destination2050.eu/wp-content/uploads/2021/03/Destination2050\\_Report.pdf](https://www.destination2050.eu/wp-content/uploads/2021/03/Destination2050_Report.pdf).

## Europe and Human Spaceflight: New Context, New Strategy?<sup>1</sup>

*Sara Dalledonne \**

### 1) Toward a change of paradigm for human spaceflight?

Although European astronauts have travelled to space more than 60 times onboard Russian and American rockets, Europe has never fully developed its own capability to launch astronauts into space. Options to develop human-rated space transportation systems have been considered several times in Europe over the last decades but the lack of political consensus among Member States on the strategic relevance of such endeavours, as well as disagreements regarding funding have driven these plans to an impasse. The ill-fated Hermes spaceplane, an optional ESA Programme led by CNES that was cancelled in 1992 due to continuing delays and major costs overruns, has been a traumatism that contributed to discouraging subsequent attempts to develop human spaceflight systems in Europe.

Notwithstanding, 60 years after Yuri Gagarin's first flight, the lack of autonomous European capabilities in the field of human spaceflight is a matter that periodically returns to the forefront of space policy debates. With the future of Europe's strategy for access to space under the spotlight, several top-level executives have again raised the question of Europe's capabilities to launch astronauts. Indeed, some recent developments may point to a possible change of paradigm for human spaceflight or, at least, to a change of landscape that would justify a fresh debate on this important topic in Europe:

#### - Space has become an environment for long-lasting human presence

Unlike the ISS that had a limited lifetime in orbit, programmes currently under development offer long-term perspectives and will require decades of efforts before objectives are fulfilled. Therefore, we can reasonably assess that human spaceflight is now being set on a permanent footing and should no longer be considered a temporary need to achieve a specific objective. All major space powers are envisioning such capability as a permanent feature of their space transportation strategy. The renouncement of Europe at this point in time might thus be definitive and irreversible and would certainly be determinant in its capacity of leadership in space.

#### - Cislunar space is a clear destination for space exploration

So far, Low Earth Orbit seemed the ultimate destination for human spaceflight, with the sole objective to service the ISS. Investing in a Europe-made crewed transportation system was therefore difficult to justify given the existing capacities available worldwide to reach this orbit, with the Shuttle on the U.S. side for the deployment phase and later on, the Russian Soyuz vehicle for routine exploitation.

However, with the advent of new space exploration projects towards the Moon, and towards Mars at a later stage, cislunar space is now set to become the privileged

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destination for most crewed and robotic flights. Furthermore, these developments raise the bar to an unprecedented level and the needs in terms for both freight and crewed space transportation will require an international effort to which Europe needs to decide whether it wants - or not - to contribute.

### - **New commercial and industrial dynamics have implications for launch service markets**

The commercial and industrial dynamics of human spaceflight are profoundly changing, with serious implications for the space launch sector at large. As a result of the service-oriented procurement approach implemented by NASA, the development of private human spaceflight capabilities, including space tourism, has become a key driver for launcher developments in the U.S., stimulating considerable private investment and blurring the lines between commercial and institutional markets.

Attracting private investment in Europe to contribute to the development of such capacity could be considered in the framework of innovative Public-Private Partnerships supporting both long-term public perspectives and commercial objectives. Taking advantage of the current window of opportunity could leverage the public investment in this domain.

### 2) **A demanding endeavour and a crucial decision to integrate human spaceflight into the European space transportation strategy**

Throughout the past decades, Europe has based the economic viability of its space transportation strategy on capturing large shares of accessible global demand and European industry has been especially successful in addressing GEO markets. However, the emergence of new aggressive competitors, as well as the advent of new generations of space telecommunications systems have deep implications on the global demand for launch services and will inevitably question the resilience of this model. In this context, the key issue of the competitiveness of the European offer will need to be addressed in the short to medium term.

Additionally, major trends in space transportation industrial and business strategies, as well as in international programmes and commercial launch markets, are changing the dynamics of human spaceflight with potentially far-reaching implications for the broader domain of access to space. Yet, much is at stake for Europe as stakeholders are actively considering the future of their strategies and programmes in this domain. Ultimately, human spaceflight is poised to become an increasingly important factor for Europe's competitiveness on commercial launch markets and for Europe's role in international programmes. This prospect seems to be considered seriously by European actors and several top-level officials have already called on Europe to reevaluate its approach to space transportation.

Enlarging the scope of missions to include human spaceflight capabilities would affect all the key factors impacting the competitiveness of European launch service providers:

- **Reusable technology:** Major international competitors leveraged new public strategies including demand for human spaceflight to develop reusable launchers able to launch both satellites and crew/cargo capsules.
- **Industrial organization:** Human spaceflight is a catalyst for new approach based on long-term commitments for service-oriented procurement that could trigger a more efficient industrial setup.
- **Sustainable demand:** An enlarged customer base could contribute to the improve-



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ment of the competitiveness of the sector.

As demonstrated by the success of the U.S. Commercial Orbital Transportation Services (COTS) programme, such investment must be first justified by new public ambitions in space exploration and international programmes and then facilitated by clear synergies between institutional goals, commercial interests, and industrial strategies. In this regard, the current space ecosystem offers new options to foster these synergies, share costs between public and private stakeholders, and distribute development costs over time, as part of an adapted service-oriented procurement. On top of that, now that private actors, such as Blue Origin, have demonstrated that development costs for such capabilities have progressively decreased, new industrial management frameworks should make it affordable for Europe. The engagement on the development of autonomous human spaceflight capabilities must also be part of a strategic vision considering the risk posed by Europe's full dependence on foreign commercial service providers.

For the time being, the most difficult decision is probably convincing European States to agree to open this file once more in light of the recent developments of space transportation worldwide and to consider with a fresh look the stakes ahead regarding access to Space.

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<sup>1</sup> Source: ESPI Brief 53 "Europe and Human Spaceflight: new context, new strategy?", Published: October 2021. All rights reserved. The article is an updated version of the ESPI Brief 53 (October 2021). For more information regarding the ESPI Brief, please visit the ESP website (<https://espi.or.at/publications/espi-executive-briefs>)

## A Recent Ruling by the Court of Justice of the European Union on Compensation and Assistance to Passengers in the Event of Cancellation of Flights Due to Strikes

Sidney Mathoux \*

### Abstract

*On October 6th 2021, the Court of Justice of the EU (CJEU) has issued a preliminary ruling judgement concerning the interpretation of Article 5(3) of Regulation (EC) No 261/2004, which establishes common rules on compensation and assistance in favor of passengers in the event of denied boarding and of cancellation or long delay of flights.*

*In particular, the Regional Court of Salzburg (Austria) had referred to the CJEU for a preliminary ruling regarding a situation in which a strike by the staff of an operating air carrier occurred in the context of a group of companies. In this regard, the Austrian Court asked the CJEU if such a strike may represent an “extraordinary circumstance” within the meaning of Article 5(3) of Regulation (EC) No 261/2004, therefore entitling the air carrier to deny the right of compensation of the passengers in case of cancellation of the flight.*

*In rendering such judgement, the CJEU, recalling some previous judgements, has reassessed the principle that a strike action intended to assert workers’ demands with regard to salary and/or social benefits is not covered by the concept of ‘extraordinary circumstances’ within the meaning of article 5(3) of Regulation No 261/2004, when it is entered into upon a call by a trade union of the staff of an operating air carrier in solidarity with a strike action which was launched against the parent company of which that carrier is a subsidiary, therefore entitling passengers to their right of compensation.*

### Case C-613/20 - CS v Eurowings GmbH - brief description of the factual background

A passenger named CS had reserved a seat on a flight from Salzburg (Austria) to Berlin (Berlin-Tegel Airport, Germany), which was supposed to be operated by the air carrier Eurowings on October 20th 2019. However, such flight was cancelled due to a strike by the cabin crew of Eurowings.

In particular, the strike was arranged on the initiative of the trade union UFO, which is a trade union for stewards and air hostesses. The strike was the result of a collective bargaining with the air carrier Lufthansa AG - the parent company of Eurowings. The strike, after being extended to the employees of several subsidiaries, including Eurowings, was originally scheduled to take place on October 20th 2019 from 5.00 to 11.00, and was extended, on the same day and without any prior notice, until midnight. As a result, the flight schedule for that day was modified and Eurowings had to cancel 158 of the 712 flights planned for October 20th 2019, including CS’s flight.

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In light of the above, CS therefore asked for a compensation of the amount of 250 Euro under Article 7(1)(a) of Regulation No 261/2004. He claimed that the cabin crew strike which led to the cancellation of his flight does not constitute one of the 'extraordinary circumstances' referred to in Article 5(3) of the Regulation, since it is attributable exclusively to Eurowings. The strike appears, in CS' view, to result from internal restructuring measures within the operating air carrier itself and should have been avoided by that air carrier by means of negotiations and corresponding agreements. Furthermore, CS has stated that collective labour disputes are inherent in the exercise of an air carrier's activity and that Eurowings was in a position to settle the specific labour dispute. According to the applicant, the strike was thus inherent in the normal exercise of that carrier's activity and was not beyond its control.

On its side, Eurowings argued that the flight was cancelled due to extraordinary circumstances, since it was extended, only at the end, to its subsidiaries, including Eurowings. Furthermore, the strike was originally supposed to take place from 5.00 to 11.00; it was only on the day of the strike that that period was extended, spontaneously and without notice from the trade union, until midnight. Eurowings stated that it was not informed of this until 5.30 on the same day, which is why the emergency plan which it had drawn up to manage the originally scheduled strike period was useless. In addition, by using subcharters on the day of the flight which CS should have taken, it was ultimately forced to cancel only 158 flights out of a total of 712 affected flights. Eurowings thus asserted that it took all the measures in its power in order to reduce the negative effects of the collective action on all the flights usually scheduled for that day. Lastly, as it can be read in the CJEU judgement, Lufthansa gave way to the demands on October 18th 2019 and announced a 2% pay rise; therefore, the warning strike at Lufthansa was cancelled, whereas the strike at Eurowings had gone ahead, even though there were no longer any grounds for it. The strike, according to Eurowings' defense, was not therefore inherent in the normal exercise of an air carrier's activity, nor was it within Eurowings' control, as the extension of the strike to other companies and its prolongation constituted unavoidable extraordinary circumstances for that company. Eurowings therefore asked for the application of 'extraordinary circumstances' clause set out by Article 5 of Regulation No 261/2004.

**Judgement of the CJEU from a legal perspective**

In terms of law, it should be recalled that, in case a flight is cancelled, Article 5 of Regulation No 261/2004 provides that the passengers concerned have the right to be compensated by the operating air carrier, in accordance with Article 7(1) of that Regulation, unless they have been informed of the cancellation beforehand within the deadlines laid down in Article 5(1)(c)(i) to (iii) thereof.

As mentioned above, article 5(3) of the Regulation nevertheless enables that air carrier may be released from its obligation to pay compensation to passengers if it proves that the cancellation is caused by 'extraordinary circumstances' which could not have been otherwise avoided even if all reasonable measures had been taken.

In particular, the concept of 'extraordinary circumstances' within the meaning of Article 5(3) of Regulation No 261/2004, which must be interpreted strictly, refers to events which, by their nature or origin, are not inherent in the normal exercise of the activity of the air carrier concerned and are beyond that carrier's actual control; in CJEU's view and case law, those two conditions are cumulative and their fulfilment must be assessed on a case-by-case basis.

In rendering its decision, the CJEU recalls several sentences of its judgment of March 23rd 2021, Airhelp C-28/20, EU:C:2021:226; in particular, paragraph 28 of Airhelp

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judgement has stated that, despite representing a moment of conflict in relations between the workers and the employer, a strike remains one of the ways in which collective bargaining may manifest itself and, therefore, it must be regarded as an event inherent in the normal exercise of the activity of the concerned employer.

The same Airhelp judgement has asserted that measures relating to the working and remuneration conditions of an operating air carrier's staff fall within the normal management of that carrier's activities; therefore, a strike whose objective is limited to obtaining from an air transport undertaking an increase in the cabin crew's salary constitutes an event that is inherent in the normal exercise of that undertaking's activity, in particular where such a strike is organized within a legal framework.

The CJUE then points out that a strike intended to assert workers' demands with regard to salary and/or social benefits must be regarded as an event that is not entirely beyond the actual control of the air carrier concerned (see paragraph 36 of the Airhelp Judgement), including the case where the strike is set in motion in solidarity with the striking personnel of the parent company of which that carrier is a subsidiary. In fact, the right to strike is, for workers, a right guaranteed by Article 28 of the Charter of Fundamental Rights of the European Union, and therefore invoking that right from their part and consequently launch strike actions must be regarded as a predictable activity for any employer, in particular in case the notice of the strike is given.

The CJEU then recalls another previous judgment, rendered on May 7th 1991, named *Organisationen Danske Slagterier* (C-338/89, EU:C:1991:192), which had asserted that a strike which has been preceded by the notice required by the applicable national legislation and in respect of which it has been announced that it could spread to sectors affecting the activities of an undertaking initially not concerned by that strike does not constitute an abnormal and unforeseeable event. In addition, where a trade union issues a call to strike to the staff of a parent company, it is foreseeable that the staff of other entities in the group led by that parent company will join the strike action in solidarity or in order to defend, on that occasion, its own interests.

Accordingly, the CJEU states that, in order to ensure the effectiveness of the obligation to pay compensation laid down in Article 7(1) of Regulation No 261/2004, a strike by the staff of an operating air carrier cannot be classified as one of the 'extraordinary circumstances' referred to in Article 5(3) of that regulation where that strike is connected to demands by the staff of that carrier relating to salary and/or social conditions that are capable of being dealt with through management-labour dialogue within the group of companies to which that carrier belongs. Nor can that finding be called into question by the fact that the strikers' demands might be unreasonable or disproportionate since, in any event, the determination of salary levels, or, more generally, working conditions, falls within the scope of the employment relationship between the employer and its workers.

In addition, the CJEU clarifies that the fact that a strike continues beyond the period that may have been mentioned in the strike notice, although an agreement has been reached in the meantime with the parent company, cannot be regarded as decisive to exclude air carrier's liability. Even assuming that, under national law, exceeding the period originally announced by the trade union which called the strike would lead that strike to be classified as unlawful, this would have no bearing on the way in which that strike is classified with regard to Article 5(3) of Regulation No 261/2004.

On these grounds, in rendering its preliminary ruling in the C-613/20 Case, the Ninth Chamber of the Court has ruled that "*Article 5(3) of Regulation (EC) No 261/2004 of*

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*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, must be interpreted as meaning that strike action intended to assert workers' demands with regard to salary and/or social benefits, which is entered into upon a call by a trade union of the staff of an operating air carrier in solidarity with strike action which was launched against the parent company of which that air carrier is a subsidiary, which is observed by a category of the staff of that subsidiary whose presence is necessary to operate a flight and which continues beyond the period originally announced by the trade union which called the strike, in spite of the fact that an agreement has been reached in the meantime with the parent company, is not covered by the concept of 'extraordinary circumstances' within the meaning of that provision".*

### Conclusion

In its recent decision, which has been briefly described above, the Court of Justice of European Union has therefore highlighted and clarified the objectives set out by Regulation No 261/2004, referred to in recitals 1 and 4 of that Regulation, which are those of ensuring a high level of protection for passengers as well as equivalent conditions for the exercise of the activities of air carriers on the territory of the European Union, regardless of the particular case. In fact, passengers are entitled to get a compensation from air carriers also in case of a strike action intended to assert air carrier's workers' demands with regard to salary and/or social benefits, which is entered into upon a call by a trade union of the staff of an operating air carrier in solidarity with strike action which was launched against the parent company of which that carrier is a subsidiary, and which continues beyond the period originally announced by the trade union which called the strike; such circumstance, as clarified by CJEU, is not covered by the concept of 'extraordinary circumstances' within the meaning of that provision and passengers are therefore entitled to be compensated by the air carrier.

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The views expressed in this article are purely those of the author, and thus may not in any circumstances be regarded as an official position.



## *FORTHCOMING EVENTS*

### **European Air Law Association (EALA) Annual Conference Copenhagen 4-5 November 2021**

Prof. Anna Masutti will be speaker at the 33rd Annual Conference of the European Air Law Association (EALA) which will be held in Copenhagen on 4-5 November 2021.

This year's conference will focus on the following themes:

- state aid and competition;
- sustainable aviation future;
- the impact of State aid on the level playing field;
- recent EU competition law trends;
- a new wave of '261' decisions;
- update on Brexit.

For more information, please click here: <https://eala.aero/#events>