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FUTURE.





ICAO APAC Regional Office Workshop on Unmanned Aircraft System Integration in National and High Seas Airspace

Bangkok, Thailand

November, 2025



UAS Operations Over High Seas



Objectives

- ➤ Highlights of the High Seas;
- ➤ Highlights specifics of UAS High Seas Operations.





ICAD

UAS Opportunities on High Seas Operations













United Nations Convention on the Law of the Sea (UNCLOS) 1982

Territorial Sea



Article 2. "[...] 2. This sovereignty **extends to the air space over the territorial sea** as well as to its bed and subsoil. [...]"



Article 3. "Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention



United Nations Convention on the Law of the Sea (UNCLOS) 1982

Exclusive Economic Zone (EEZ)



Article 55. "The exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this Convention.



Article 57. "The exclusive economic zone shall **not extend beyond 200 nautical miles** from the baselines from which the breadth of the territorial sea is measured.



United Nations Convention on the Law of the Sea (UNCLOS) 1982

High Seas



Article 86. "[...] apply to all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State.. [...]"

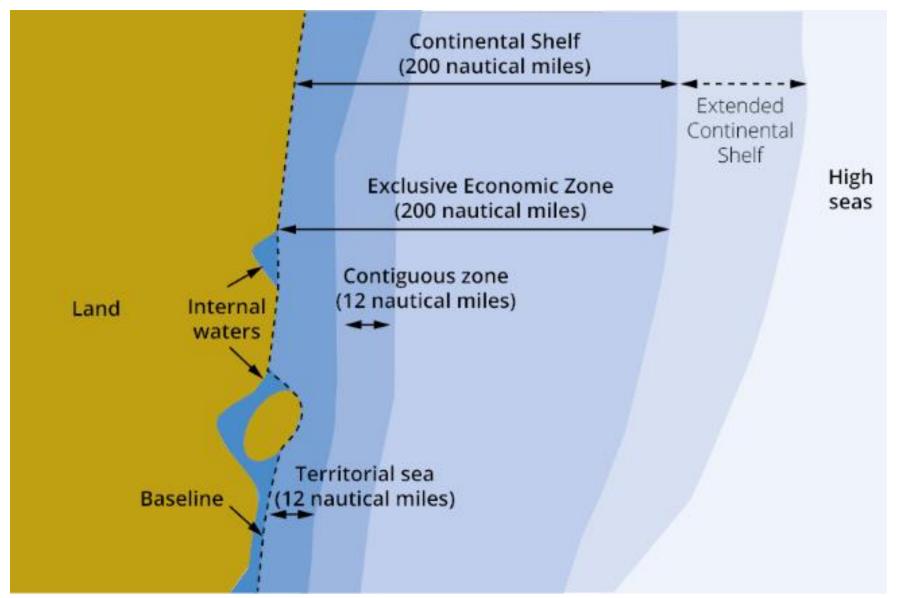


Article 87. "1. The **high seas are open to all States**, [...]. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law. [...] (b) freedom of overflight; [...]"



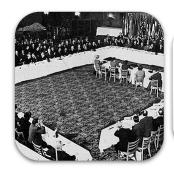
Article 88. "No State may validly purport to subject any part of the high seas to its sovereignty."







Convention on International Civil Aviation - 1944



Article 1.

" [...] every State has complete and exclusive sovereignty over the airspace above its territory."



Article 2.

"[...] the territory of a State shall be deemed to be the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State."



Convention on International Civil Aviation - 1944



Article 8.

"No aircraft capable of being **flown without a pilot** shall be flown without a pilot over the territory of a contracting State **without special authorization** by that State and in accordance with the terms of such authorization. [...]"



Article 12.

"Each contracting State undertakes to adopt measures to insure that every aircraft [...], shall comply with the rules and regulations relating to the flight and maneuver of aircraft there in force. [...]. Over the high seas, the rules in force shall be those established under this Convention. [...]."



Convention on International Civil Aviation - 1944



Article 20.

"Every aircraft engaged in international air navigation shall bear its appropriate nationality and registration marks."



Article 28.

- "Each contracting State undertakes, so far as it may find practicable, to:
- a) provide, in its territory, airports, radio services, meteorological services, and other air navigation facilities [...;
- b) operate such services and facilities [...] in accordance with the standards and recommended practices established from time to time [...]"



Convention on International Civil Aviation - 1944



Article 29.

"Every aircraft of a contracting State, engaged in international navigation, **shall carry the following document**s in conformity with the conditions prescribed in this Convention:

- (a) Its certificate of registration;
- (b) Its certificate of airworthiness;
- (c) [...]"



Article 31*. "Every aircraft engaged in **international navigation shall be provided with a certificate of airworthiness** issued or rendered valid by the State in which it is registered."



Convention on International Civil Aviation - 1944

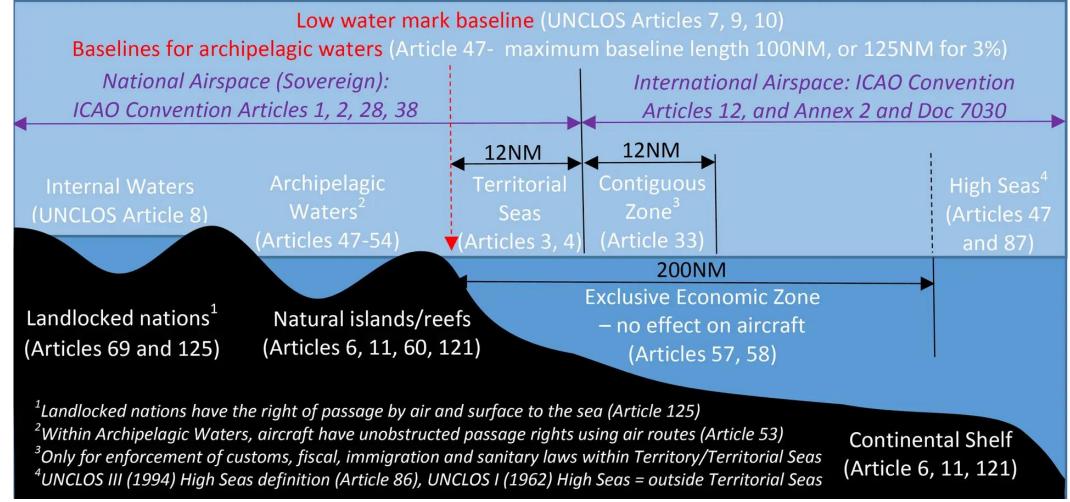


Article 37. "Each contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation. [...]."



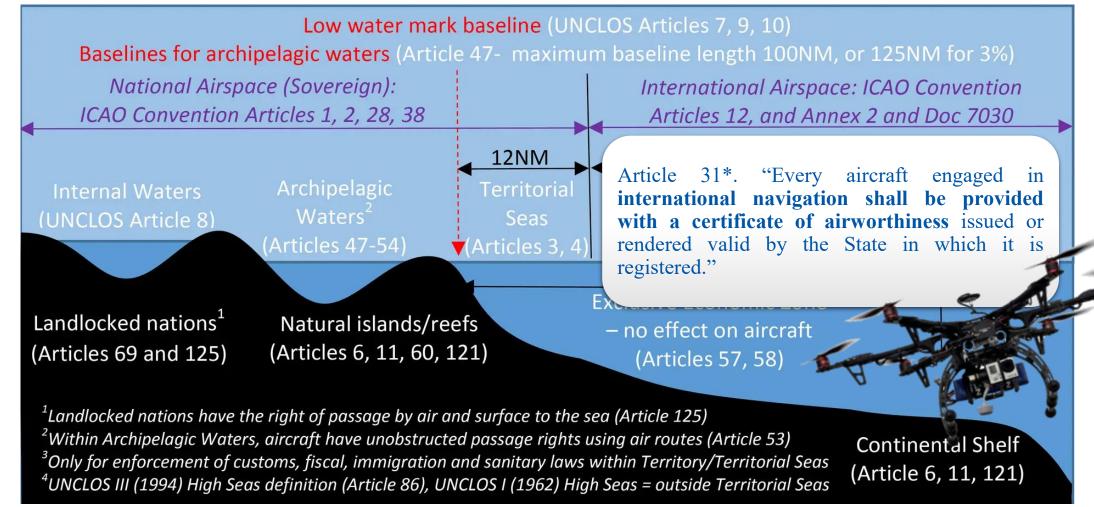
Article 38. "Any State which finds it impracticable to comply in all respects with any such international standard or procedure,[...], shall give immediate notification to the International Civil Aviation Organization of the differences between its own practice and that established by the international standard [...]."







Source: ICAO ATM/SG. Available at: https://ifatca.org/article/airspace-closures/



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Source: ICAO ATM/SG. Available at: https://ifatca.org/article/airspace-closures/

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Regulatory Context

Convention on International Civil Aviation Annexes



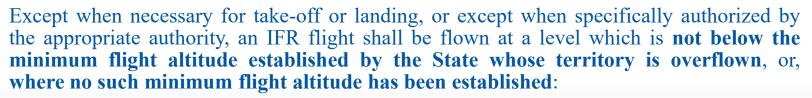
4.6 Except when necessary for take-off or landing, or except by permission from the appropriate authority, a VFR flight shall not be flown:

. . .

b) elsewhere than as specified in 4.6 a), at a height less than 150 m (500 ft) above the ground or water.

Annex 2 - Rules of the Air





... b) elsewhere than as specified in a), at a level which is at least 300 m (1 000 ft) above the highest obstacle located within 8 km of the estimated position of the aircraft.

Annex 2 - Rules of the Air



Convention on International Civil Aviation Annexes



Appendix 4.

1.3 An **RPA** shall **not be operated over the high seas without** prior **coordination with** the appropriate **ATS** authority .

Annex 2 - Rules of the Air



Appendix 4.

2.1 [...] a) an **RPA** shall **have a certificate of airworthiness** issued in accordance with national regulations and in a manner that is consistent with the **provisions of Annex 8**; and

Annex 2 - Rules of the Air

Convention on International Civil Aviation Annexes



3.2.2 As of 26 November 2026, the Certificate of Airworthiness issued to a remotely piloted aircraft shall convey evidence of the airworthy status of the remotely piloted aircraft system (RPAS), as a complete system, to ensure it conforms to the type design and is in a condition for safe operation.

Annex 8 - Airworthiness



2.1.2 Those portions of the airspace over the high seas or in airspace of undetermined sovereignty where air traffic services will be provided shall be determined on the basis of regional air navigation agreements. A Contracting State having accepted the responsibility to provide air traffic services in such portions of airspace shall thereafter arrange for the services to be established and provided in accordance with the provisions of this Annex. [...]

Note 2.— The Council, when approving the Foreword to this Annex, indicated that a Contracting State accepting the responsibility for **providing air traffic services over the high seas** or in airspace of undetermined sovereignty **may apply the Standards and Recommended Practices** in a manner consistent with that adopted for airspace under its jurisdiction.

Annex 11 – Air Traffic Services

Convention on International Civil Aviation Annexes



2.11.1 Recommendation.— The delineation of airspace, wherein air traffic services are to be provided, should be related to the nature of the route structure and the need for efficient service rather than to national boundaries.

Annex 11 – Air Traffic Services



2.11.2.1 Flight information regions shall be **delineated to cover the whole of the air** route structure to be served by such regions.

Annex 11 – Air Traffic Services

States Demands



AN-Conf/13-WP/56 31/8/18

ANConf/13 – WP56

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

COMMITTEE A

Agenda Item 5: Emerging issues 5.2: Operations below 1000 feet

ENABLING UNMANNED AIRCRAFT OPERATIONS OVER THE HIGH SEAS

(Presented by the United Stat

EXECUTIVE SUMMARY

As the market for unmanned aircraft systems (UAS)¹ continue significant growth, an emerging issue involves UAS flights over governing high seas operations does not provide for States a authorize non-certificated UAS to access this airspace safely, an for ICAO and States to address this shortfall to accommodate ti new, non-traditional entrants into the aviation sector.

Action: The Conference is invited to agree to the recommendation

1. INTRODUCTION

- 1.1 Worldwide, rapid growth in demand for unmanne spurring thousands of new entrants to aviation and a multitude or incorporation into the global aviation framework. An emerging is this environment, UAS have been involved in commercial ventur research, and oil platform inspections; and in government or measurement, fishery compliance, search and rescue, and security
- 1.2 The Convention on International Crit Aviation () sovereighty over the airspace above their territory, where territory waters adjacent thereto. Airspace beyond the territorial waters of high seas airspace and aircraft engaged in international rare requirements, including the carriage of a certificate of airwin international aviation Standards and guidance material applicable UAS in mind, and compliance with existing requirements may instance, impossible to meet.
- 1 Excluding unmanned free balloons
- ² Articles 31 and 29 of the Convention on International Civil Aviation, respectively

(3 page



AN-Conf/14-WP/102 28/6/24 (Information Paper) English only

FOURTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 26 August to 6 September 2024

Agenda Item 2: Timely and safe use of new technologies 2.2: Addressing safety risks related to evolving aviation technologies

HARMONIZING UNMANNED AIRCRAFT OPERATIONS OVER THE HIGH SEAS

(Presented by the United States and co-sponsored by Australia)

EXECUTIVE SUMMARY

This paper recognizes the impact of the evolving use of unmanned aircraft systems (UAS) in operations over the high seas. Evolving concepts size 2018 include new UAS flight operations, such as inspections of offshore platforms, finding fish, monitoring the environment, and conducting search and rescue operations. ICAO Member States have a strong desire to conduct these operations using risk-based operational safety measures to meet their safety assurance responsibilities in the near-term and on an enduring basis.

ICAO, States and Regional Safety Oversight Organizations (RSOOs) need to coordinate and collaborate with industry and other Stakeholders to promote the safe, globally harmonized integration of these UAS operations. A two-step approach is to collaborate to draft and then adopt a resolution for the 24nd Seasion of the ICAO Assembly that recognizes mitigations needed to address safety risks and then work to modify the existing ICAO Standards and Recommended Practices (SARPs) and guidance material to incorporate the adopted risk mitigation framework in all appropriate Annexes. Consideration also needs to be given to effective and appropriate interim arrangements.

Action: The Conference is invited to agree to Recommendation 2.2/x – Addressing safety risks related to evolving aviation technologies in paragraph 3.

1. INTRODUCTION

1.1 The evolving use of UAS is one example of how changes in aviation technology, concepts and tools disrupt the aviation system. UAS operations have risks to other aircraft, and persons and property on the ground that States can mange through established safety management practices. States can then document established risk management and all appropriate areas of their regulations. ICAO's Model UAS Regulations offer model language for States to facilitate the establishment of UAS regulations, which States may adapt, as appropriate, to meet their specific needs in their sovereign airspace.

ANConf/14 - IP/102





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ICAO Updates



AN-Conf/13-WP/311 18/10/18

THIRTEENTH AIR NAVIGATION CONFERENCE

Montréal, Canada, 9 to 19 October 2018

REPORT OF COMMITTEE A TO THE CONFERENCE ON AGENDA ITEM 5

The attached report has been approved by Committee A for submission to the Plenary.

> Alexis Brathwaite Committee Chairperson

Note.— After removal of this covering sheet, this paper should be inserted in the appropriate place in the Report Folder*

(15 pages)

Recommendation 5.2/1 — Very low altitude operations

[...]

That ICAO:

[...]

f) develop a solution to enable States to authorize operations of non-certificated UAS over the high seas, using parameters to be defined in a transparent manner, including investigating the maximum altitude at which these operations would be allowed;

ICAO

ICAO Updates



A40-WP/617 P/45 30/09/19

ASSEMBLY — 40TH SESSION PLENARY

REPORT OF THE LEGAL COMMISSION ON THE GENERAL SECTION AND AGENDA ITEMS 37, 38, 39 AND 40

(Presented by the Chairperson of the Legal Commission)

The attached report on the General Section, Agenda Items 37, 38, 39 and 40 has been agreed by the Legal Commission. Resolution 39/1 is recommended for adoption by the Plenary.

38:13 At the conclusion of its deliberations, the Commission established the General Work Programme of the Legal Committee as follows:

1) International **legal aspects of unmanned (pilotless)** aircraft operations and integration into civil aviation;

[...]



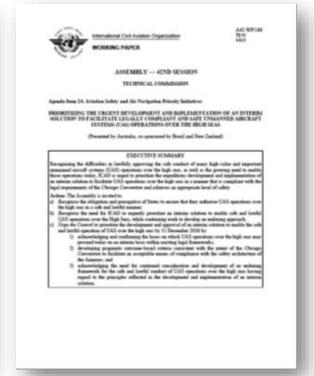
- > Secretariat Study Group on Legal Issues related to Pilotless Aircraft (SSG-LIPA) Feb 2020:
 - > Subgroup on Compliance with the Chicago Convention (SSG-LIPA-CCSG); &
 - Subgroup on Liability and Security (SSG-LIPA-LSSG)

Assembly 40th Edition – WP617

ICAO Updates

42th Assembly 23 Sept - 03 Oct 2025





Calling for the urgent development and implementation of measures to facilitate legally compliant and safe UAS operations over the high seas, including interim solutions and recognition of the obligation and prerogative of States to identify the legal basis on which compliant operations might be conducted today.

WP-160

presented by Australia, co-sponsored by Brazil, Canada, New Zealand and Singapore

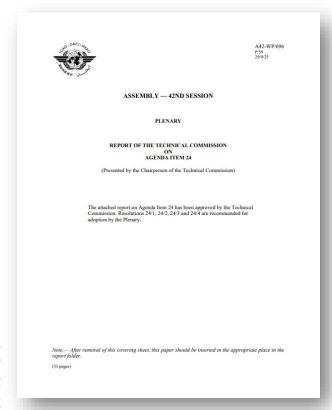
WP-287

presented by the United States and co-sponsored by Singapore



ICAO Updates

42th Assembly 23 Sept - 03 Oct 2025



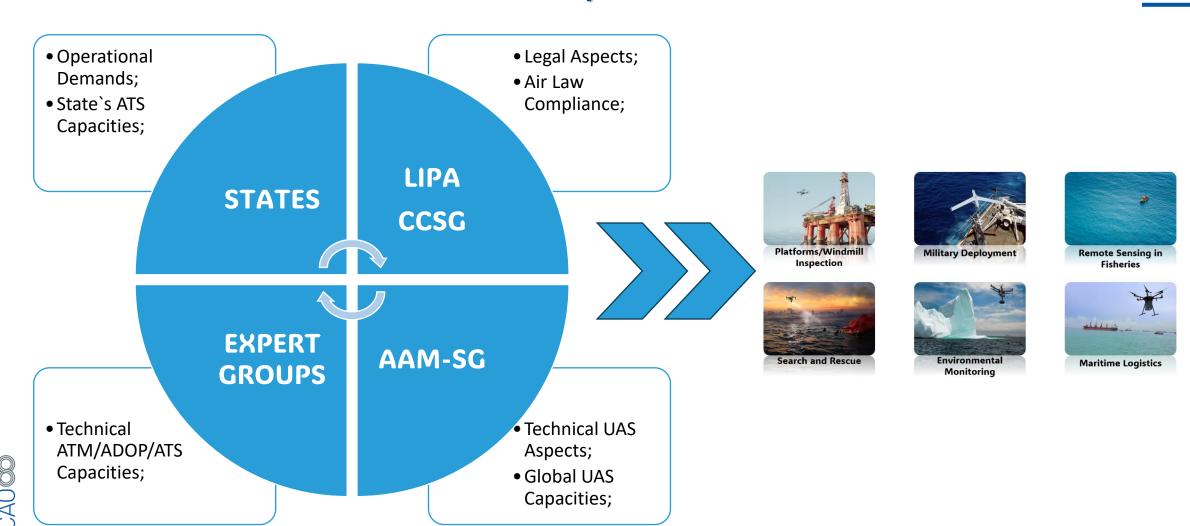
WP-696

Technical Commission Report

"24.92 [...]. The Commission acknowledged the need for a **timely solution** and noted the ongoing work as a part of the gap analysis undertaken by the relevant expert groups. The Commission also acknowledged the current framework of the Convention on International Civil Aviation (Doc 7300), and more specifically certain provisions of its Annexes, as presenting challenges for, if not necessarily insurmountable obstacles to, UAS operations over the high seas, which can inhibit States from authorizing said operations in a lawful manner. The Commission, in expressing broad support for the two papers, noted the need for a long-term framework, requested that the Organization develop an interim solution to enable States to lawfully authorize such operations, both in a manner commensurate with risk and, in the meantime, confirm the obligation and prerogative of States to identify the legal basis on which compliant operations may be conducted today, pending and subject to the adoption of interim and more enduring provisions. The Council was urged to develop and adopt, ideally before the end of 2026, an interim framework which would be outcome-based, consistent with the intent of, and compliant with, the Chicago Convention, such as through acceptable means of compliance. In noting the recent legal work of the relevant expert group on the subject, the Council was also requested to consider using an expedited development process for such interim solutions."

(p. 24-26)

ICAO Updates



Thank You

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