



Review Article

# Aviation Safety International Standards in the Framework of National Air Law

Hamid Kazemi<sup>1\*</sup>

1. Aerospace Research Institute, Ministry of Science, Research and Technology, Tehran, Iran

\* [h.kazemi@ari.ac.ir](mailto:h.kazemi@ari.ac.ir)

## Abstract

Expansion of aviation is not achievable without regulating and improving air safety worldwide. Air safety in aviation has always been associated with approving and implementing national and international laws, regulations and standards. The international aviation community has approved uniform safety regulations under treaties, bilateral agreements, and internationally required standards. The international civil aviation organization (ICAO) is continuously updating standards following the development of aviation technologies. However, implementing international air safety standards involves compliance with and implementation of the regulations by the states in their air transportation. With the adoption and updating of international air standards of ICAO, do the member states comply with them? Member States are not in the same status regarding the development of the aviation industry. Various political, economic, and technical factors impede countries' correct and appropriate implementation of standards. Hence, the member countries should obtain a legal method so that the international technical air standards in their aviation industry become mandatory. However, they should adopt these standards under national law and harmonize them with international air standards. Formulating them under national law is the preferred way to comply with these uniform international safety standards. To accomplish this, the relevant national legal and regulatory infrastructure for air regulations should be established in all states. The author first explains the theoretical and practical basis of developing comprehensive international aviation safety standards and then describes the mechanism and process of approving these standards in the framework of the national code.

**Keywords:** Aviation Safety; Standards; Recommended Practices; National Law; International Law.

## Nomenclature

CAO	Civil Aviation Organization of Ira
CAA	Civil Aviation Act of Iran
ICAO	International Civil Aviation Organization
SARPs	Standards And Recommended Practices
USOAP	Universal Safety Oversight Audit Programs

## 1. Introduction

Air transportation and aviation developments are impossible without enduringly promoting air safety worldwide. Air transportation is susceptible to different dangers in aviation, such as inherent risks of flight. So aviation safety has been a concern in every society, and its importance is unanimously recognized. [1] Because of the very nature of aviation, it has long been recognized that the technical air standards on air safety should be uniform throughout the world. This uniformity of regulations requires the establishment and application of uniform international standards. [2]

Since the initiation of international flights, the international aviation community has endeavored to

approve uniform safety regulations, including treaties, bilateral agreements, and technical standards. The international community places particular importance on safety matters in civil aviation. The international civil aviation organization (ICAO) ensures the safe and appropriate development of international civil aviation. The ICAO devised and adopted the Standards and Recommended Practices (SARPs) in 19 Annexes. [3]

With the adoption and updating of the Annexes, do all member states of ICAO comply with them? Do National legislators consider international air standards in their process of lawmaking? [4] Do the member countries act per their legal procedures to make international technical air standards mandatory? Whereas the Member States are not in the same legislative status regarding developing national aviation regulations, various political, economic, and technological factors impede countries' appropriate implementation of standards. The approval of international aviation regulations according to multiple factors in each state is usually done as a national law according to their constitutional law. [5]

Generally, if a member state gives the same status to the Annexes as of the Chicago Convention 1944, the Annexes will be directly enforceable upon ICAO's approval. [6] However, member states like Iran do not consider the Annexes directly applicable and enforceable. In that case, they must be approved by the national legislative and go through a specific process to become enforceable under national law. [7] Has Iran been able to pass international air standards in the framework of the national aviation code? There are infrastructural challenges along the way.

The author first explains the theoretical basis of developing comprehensive national and international aviation safety regulations and then discusses the existing obstacles and how to establish a sound infrastructure for national air legislation in Iran.

## 2. International Air Safety Standards

After the Second World War, numerous states met in Chicago to establish the international rules of civil aviation. As a result of the meeting, the Convention on International Civil Aviation (the Chicago Convention 1944) was ratified on 7 December 1944, and ICAO was founded on 4 April 1947. [8] Since its establishment was closely tied to aviation safety, the priority of the Convention and ICAO became to ensure the safety and regulate the development of aviation worldwide. Unless aviation safety is secured, other issues, such as economic and social development, will not be achieved through the air transport section. On the other hand, the nature of air transport is overwhelmingly international, so a lack of uniform international standards and regulations would cause aviation to face serious problems. Hence it is international regulations and standards that mainly regulate aviation activities. Aviation safety is of prime importance in international flights. It is not a mere national issue of concern; therefore, the contracting states cannot operate aircraft independently without paying attention to international standards. [9]

Traditionally, air safety is measured based on the number of air accidents and passenger transport per kilometer. When an air accident occurs, the world community experiences a severe shock. In a strict sense, air safety is associated with preventing air accidents. Any reduction in air accidents indicates an improvement in air safety. Nevertheless, in the broad interpretation and new sense of aviation safety, in addition to preventing aviation accidents, it extends to the safe operation of aircraft in all aviation fields. Air safety is related to the safe operation of the aircraft, which initially includes the airworthiness and license of the flight personnel and crew. Ensuring air safety is beyond the prediction of air accidents from a technical point of view and consists of all operation issues in the aviation industry [10].

Nowadays, air safety involves more areas in the aviation industry. Despite the control of safety standards

such as airworthiness certificates and pilot and flight crew certificates by the competent authorities, the safety of the aircraft may be endangered. Air safety is under the risk management framework, making it a critical issue for all states, the aviation industry, the scientific and academic community, the general public, and particularly international entities such as ICAO as an international and specialized organization of the United Nations. The ICAO Air Navigation Commission has defined *aviation safety* as "freedom from unacceptable risks of damage to people, aircraft, and property." Potential risks can be less or more. The type of risk can justify risk management from the time of the flight permit for the pilot to the time of the crisis. [11]

Aviation safety also requires a multifaceted strategy that examines technical, managerial, economic, and, most importantly, legal aspects. The existence of a safety standard from the standpoint of air safety may seem very crucial and attractive at first; however, it may be economically costly for many countries, so their priority would not be complying with that standard. In such cases, comprehensive management is necessary for developing and applying air standards. It should also be noted that the issue of safe and unsafe aircraft and aviation is dynamic. Topics considered aircraft safety in the past are no longer considered safe today. [12]

Therefore, following the development of new technology in aviation, approving new standards plays a vital role in aviation safety. Improving air safety, firstly, requires special knowledge, but it is not the only necessary and sufficient condition. Air safety in a civil aircraft was initially related to the operational and technical matters of the aircraft. However, it was gradually considered a matter of public law because it came under states' control to regulate laws and regulations due to the rights of individuals and legal entities [13].

## 3. The Uniformity of the International Aviation Standards - An Inevitable Undertaking

Air safety is not limited to a country's national borders because its risks involve international air transportation. When each state exercises its sovereignty in its territory, it cannot regulate the air safety standards without cooperation with other states. Although a contracting state may ensure the airworthiness of national aircraft registered in its country, these standards may not be acceptable for other contracting states. The risks that may occur to aircraft of contracting states are global in nature; thus, global risks require worldwide management and international measures. The task has been given to ICAO, and it is accepted that it, as a specialized organization of the United Nations, is responsible for international aviation safety. ICAO is a global decision-making forum for contracting states on aviation safety. [14]

The states recognized the inevitability of establishing and upgrading unified air safety since the introduction of plane flights, and national laws drafted some air safety regulations. Nevertheless, those standards did not meet the requirements necessary to ensure safety. The national air regulations were more related to compensation to the third party on the ground. The law and regulations paid little attention to the safety of the airplane on the flight. Most of the regulations were related to the issuance of pilot licenses or airworthiness certificates that could ensure the safety of third parties on the ground. [15]

With the states' approval of national air laws and regulations, the differences in issues, such as the main conditions for the airworthiness of aircraft at the international level, were soon revealed. The aircraft was a vehicle that quickly crossed the territorial border of the other states, and its operation was regulated by the national law of the state issuing the permission to operate the aircraft. The difference became apparent when one state's aircraft entered another territory. The difference in the expression of safety regulations reduced safety in international flights. Hence, It was well understood that there is a need to provide uniform regulations and standards to ensure safety at the international level.

In an international meeting in 1889, which was organized by a few states such as France, the United States of America, and England, some aviation issues such as aviation licenses, the responsibility of air operators for passengers and third parties on the ground were examined, but no tangible results were achieved. After this summit, the first international conference in the field of air safety was held in France in 1910. Although the conference did not provide any air regulations, the emphasis of the participating states and their desire for the uniformity of the safety regulations is undeniable. This issue remained a concern of the states, especially European states, until the end of the First World War. After the war, they decided to ratify a convention on air law. The Convention addressed safety issues regarding aircraft registration and nationality, airworthiness, and pilot certificates. That Convention regulated some air rules, which later on were used in the Chicago Convention of 1944. [16] Although aviation safety started with a focus on the safety of aircraft on the ground, it expanded to the activities of the aircraft in flight and finally extended to ground activities such as air traffic services and airport security inspection procedures.

International air entities were concerned with the importance of safety and were eager to promote it even after the Chicago Convention of 1944. In the third millennium, humanity is more concerned about air safety than at any time. Air accident is considered a tragedy for all humans because it will significantly impact the public society compared to accidents in the other transportation sectors. So the international air communities, in addition to setting safety regulations for air accidents, developed air safety standards for other aviation sectors. Currently, air safety is essential for passengers and all members of

aviation society. The plane has become a common means of transporting passengers and cargo; people usually use airplanes for different aims. [17]

Thus the international air community has prioritized the technical safety standards of aircraft and aviation. Air safety protects human lives and makes this industry an accessible mode of transport worldwide. Air safety standards are no longer a national issue, and ICAO considers aircraft safety a priority on its agenda.

#### **4. Regulating International Air Safety Standards**

As declared in the Chicago Conference in 1944, it aims to use the air for human society and serve it. Drafters of the Convention were trying to put the economic aspects first. However, according to what the states approved, air safety has priority over other elements. The preamble of the Chicago Convention and Article 44 is more expressive than other regulations related to safety, which are designed to promote and develop air safety. One of the contracting states' duties in implementing air safety under the Chicago Convention is to emphasize the uniformity of standards that promote air safety. The initiative system, designed by the convention drafters, was accepted by the ICAO Council and assumed to apply to all member states unless they notify ICAO that they cannot comply with the declared standard. Although the goal of this system is uniformity, it offers sufficient flexibility. [18]

ICAO has fulfilled its duties in regulating air safety in the past few decades. However, with the globalization of aviation and the joining of many independent member states to the aviation community, it faced challenges in oversight and controlling air safety worldwide. In 1947, when the Convention came into effect, only 26 countries were party to it, but currently, 190 countries are party to this Convention. The increasing number of members has imposed many obligations on ICAO to control the uniformity of safety standards by the member states. [19]

Due to the differences in countries' economic and technological status, many developing countries do not have the appropriate tools and expertise to comply with ICAO standards. As a result, the recent years' agenda at ICAO was how to ensure the global implementation of such standards. ICAO has also encouraged regional and national initiatives to strengthen the national aviation safety regime. The higher air standards applied in some developed countries or regions of the world have been accepted as a motivation to enhance safety. Still, at the same time, it has placed a heavier burden on ICAO to maintain global peace and establish and apply international standards by all member states. [20]

This growth in member states has imposed extra tasks on ICAO to ensure uniform implementation of international safety standards. Because there was no accurate information on how the contracting states implement the regulations, standards, and recommended practices, ICAO established the "Universal Safety

Oversight Audit Program s” (USOAP) to audit the compliance of countries with these standards and procedures, which has become common in the last decade. [21]

## 5. ICAO Standards and Recommended Practices (SARPs)

One of the duties of states in implementing aviation safety under the Chicago Convention is to emphasize the uniformity of standards that promote aviation safety. This initiative system, designed by the drafters of the Convention, was adopted by the ICAO Council, and it was assumed that all Contracting States must comply with these provisions unless they notify ICAO that they cannot comply with the declared standard. Therefore, this system, whose goal was uniformity, offered sufficient flexibility compared to the standards of the 1919 Paris Convention. The technical appendices of the 1919 Paris Convention were binding and inflexible for the contracting states. [22]

Global aviation is a large industry that traditionally consists of aircraft, flight crews, and airports. While these elements include flight operations, modern aircraft have other complex features. Factors such as air traffic management and control systems for preventing airplanes from colliding and ensuring safety during landing and takeoff, meteorological information systems, communication devices, and other facilities and equipment are essential for maintaining safety. Regarding these various elements, it is critical to establish cooperation and coordination among countless people from different departments with related specialties. ICAO not only provides a legal framework for member states to regulate air safety but also creates a constituent mechanism through ICAO Council to implement the goals of the Convention. One of the mandatory duties of the ICAO Council for safety is to accept and amend the Annexes, which include international standards and recommended procedures. The Annexes are continuously reviewed and modified to be compatible with new aviation technologies. So far, the ICAO Council has approved 19 Annexes of the Chicago Convention. [23]

The Annexes include standards and recommended practices. Appendix A of ICAO Resolution (A29-7) defines the two terms of standards and recommended practices. A standard is any determination of physical characteristics, form, material, implementation, personnel, or routine whose uniform application is deemed necessary for the safety of or regulating international aviation. The contracting countries follow them according to the Convention. The recommended practices are any determination of physical characteristics, form, materials, implementation, personnel, or routine, the uniform application of which is considered desirable for the safety of, regulating, or efficiency of international aviation, and the contracting countries strive to comply with it according to the Convention. [24]

## 6. Mandatory or Non-mandatory ICAO Standards

According to the ICAO definition, compliance with the standard is necessary, and compliance with the proposed procedure is desirable. However, it should be noted that one cannot immediately conclude that following what is standard is mandatory and that following the proposed procedure is voluntary. Even though these two words look different, they are, in fact, synonymous terms and appear as appendices attached to the Chicago Convention. Article 38 of the Chicago Convention has mentioned the proposed standards and procedures and how the member countries should deal with their implementation. The ambiguity in the article caused the states to adopt two different approaches to implementing it. The first approach indicates that compliance with the proposed standards and procedures is mandatory for the countries because the member states must immediately declare the difference in performance regarding the standard, if any, after the approval of the standards and the proposed procedures.

Another approach is the optional implementation of the standards and proposed procedures; according to that opinion, the member states can inform ICAO whenever they find it impossible to comply with the abovementioned standards. Hence, they will always have the opportunity to notify the ICAO of the impossibility of complying with international regulations and standards. Therefore, the ICAO standards and recommended practices will never become binding for member states. However, according to Article 38, notification of the impossibility of implementing international standards is accepted immediately after publishing and approving standards by ICAO. Otherwise, states have to follow the standards. National legislators must approve international aviation standards to become the national code in that country. The legislature must pass them so the courts can rule on them. They should also become laws before the state can ask the aviation players in the country, such as airlines, to observe them. In other words, compliance with national standards requires approval by the legislative authorities of each member state. The following explains the process of approving these standards by the national legislature. [25]

## 7. National Aviation Safety Obligations

Aviation safety concerns potential risks and compliance with safety standards that affect flight safety, which all states must observe. The states should approve the air safety regulations to comply with international standards in promoting international air transportation. Air safety involves numerous complicated factors, so the national

legislature should follow the international obligations imposed by the Chicago Convention and other sources of international law and develop national aviation standards by considering international standards and the conditions of their society. Safety oversight is defined as the duty of states to ensure the effective implementation of recommended procedures and standards included in the Annexes. Each state has been assigned this duty based on the principle of states' sovereignty over their land. ICAO has emphasized that the responsibility of states to monitor safety is one of the Convention's principles. The responsibility of states is based on two things:

1. Nationality, registration, or validity of the state flag on the relevant aircraft
2. The territorial jurisdiction of the relevant state [26]

Articles 17 and 18 of the Chicago Convention have mentioned the two fundamental principles, i.e., the aircraft's nationality and registration and the state's jurisdiction. According to these two articles, it should be noted that mere registration of the aircraft has nothing to do with safety. Article 12 of the Convention states that each Contracting State must take measures to ensure that any registered aircraft comply with the rules and regulations related to flight and maneuvering. Any violation of the air rules will cause the aircraft to be prosecuted. Furthermore, under Article 31 of the Convention, the state of registered aircraft is responsible for issuing a valid airworthiness certificate for any aircraft involved in international flights. Article 32 of the Convention provides the regulations on the valid flight permit for the pilot and flight crew. Article 30 of the Convention states that the above matters are the duties of the registered state unless it has delegated its responsibility to another state based on Article 83 bis of the Convention. Moreover, a registered state has some safety-related duties, such as its duties in air accidents, like participating in the investigation of accidents and finding their causes. Alternatively, the state of registered aircraft has the authority to consider crimes and illegal actions on board aircraft and has jurisdiction to view it in his country [27].

## 8. International Air Standards in the Framework of National Law

A national air law includes regulations that the states at first impose on national and foreign persons as well as on individuals and legal institutions in their territory due to sovereignty and territorial jurisdiction over the land and the airspace above it, and also impose on registered aircraft on board and persons on them due to quasi-territorial and personal jurisdiction in abroad and other state jurisdictions. Hence, national standards affect national and international air services and national and foreign air transport operators. National standards regarding international air services should also apply according to the international obligations of bilateral and

multilateral agreements and treaties and other states' actions. [28]

From the legal viewpoint, the regulations and standards of the aircraft mentioned in the Annexes could not be directly applied by all member states. Still, they should approve national aviation laws and regulations according to them. In other words, national law should cover international standards and go through the approval process based on fundamental rights to become law and enforceable.

Aviation safety is conceivable if all states follow a minimum uniform air standard for aircraft operation within their territory and in other countries airspace. Suppose states operate aircraft regardless of international standards and follow standards that differ from other states or impose rules that conflict with international standards or standards of other states. That conduct would disrupt the international air transportation system, hindering further international air transportation development. On the one hand, foreign states stop air operations and transportation to that state due to non-compliance with uniform international standards. On the other hand, the states do not allow the registered aircraft of that state to enter their territory because that aircraft does not meet the minimum international air standards.

Compiling aviation law and regulations requires knowing its fundamental principles; to create a comprehensive and complete set of air transportation laws and regulations. It is necessary to respect the special conditions of any state for its air transportation affairs. The compilation of air transport regulations should have a unique mechanism that can answer the country's needs in the air transport field. In addition to law and regulation, establishing and developing a particular body as a civil aviation organization or administration is necessary to accept responsibility for regulating and controlling aviation activities based on ICAO standards. [29]

## 9. The National Legislative Process for Setting Air Standards

The process of drafting national air standards has three main parts:

- Legislation (legislation, policy-making, and application of rules and regulations).
- Issuing a certificate (granting a certificate, determining the procedures and conditions for issuing a certificate, and canceling a certificate for air transport services permanently or for a long time.
- Issuing temporary licenses (i.e., granting licenses, determining conditions and procedures for obtaining licenses, refusing to issue licenses for tariffs and flights).

Each of the cases mentioned above is completed according to the need of the actions of other states.



The legislative part of the process of drafting national regulations has three elements:

- Lawmaking,
- Policy-making and
- Regulations (compilation of regulations and instructions) [30]

Any member state probably applies all the three elements mentioned in this process according to its legislative system, structure, and customary. They are different from one state to another. In general, the aspect of the legislation is to create and enforce significant policies and primary laws. As soon as the laws are established and approved, they become enforceable and are usually amended only when critical issues occur. In contrast to law and policy making, the amendment and change of standards are done frequently, and their amendment is developed and approved by the aviation authorities. They are more flexible than laws and have the possibility to assert exceptions or exemptions granted outside the law. [31]

## 10.A Regulatory Structure for Drafting National Air Law, Including Technical Standards

The entity responsible for regulating civil aviation is to compile national air standards. The primary element in the structure of national regulations is the national aviation authority. They are usually called the Civil Aviation Organization or Administration. They are state institutions directly responsible for regulating all technical aspects of civil air transportation (aviation safety and air navigation) and economic (commercial aspects of air transportation). The duties of the civil aviation organization for the compilation of international air standards consist of the following: [32]

- Developing economic policies and strategies related to air transportation
- Setting special rules and regulations for implementing the primary national aviation law and determining the goals and issues of the national policy in the future
- Issuance (rejection or suspension) of certificates and licenses for foreign air transport operators
- Issuing permission to determine the tariff and scheduled flights
- Coordinating air transport policies and regulations and other institutions responsible for trade, commerce, tourism, economic affairs, taxation, national development
- Observing the provisions of bilateral and multilateral agreements related to air transportation.

An efficient national aviation organization involves skilled and expert personnel. The expertise required for drafting air standards includes the following:

- Analyzing relevant quantitative and qualitative information and data, such as those related to air transport tariffs and agreements
- Forecasting traffic to determine infrastructure requirements, suggesting new routes
- Making decisions about issuing certificates and other permits
- Articulating opinions and decisions, agreements, and political statements
- International communication with air transport operators and foreign states as part of air service consultations
- Active participation in international organizations such as ICAO and IATA and regional and extra-regional organizations
- Discussing legal issues related to the interpretation of laws and agreements and the process of issuing certificates and permits
- Carrying out executive affairs, including financial matters, personnel, information storage, retrieval
- Public relations and cooperating with other state institutions

The aviation law department of air transportation regulations and standards, having the necessary skills to perform the above duties, works under an aviation organization in any member state. Another element in the organizational sector is the structure of national regulations of non-aviation state institutions whose actions affect international air transport. They are under the supervision of state authorities. They include:

- Customs control and supervision (import and export of goods)
- Immigration control and supervision (entry and exit of international airline passengers)
- Public health standards (including inspection and quarantine of passengers and goods)
- Supervision of financial affairs (money exchange and remittances, including the income of foreign airline companies)
- Taxes (from the income of foreign operators, tariffs, fuel, and equipment)
- Protecting fair competition, which can include the prohibition of some activities by national and foreign air transport operators
- Environmental control, for example, traffic restrictions and shutdowns in airports where noise pollution from airplanes is a concern
- Development of world tourism (air travel of foreigners to the country)
- Employment and job issues; actions that can affect the conditions of employees of air transport operators. [33]

## 11. Issues and Solutions in Codification of the National Air Standards in Iran

Although Iran is one of the member states of ICAO, according to national law, the national legislator's approval of international air standards must become mandatory and enforceable. Mere ratification of the Annexes by ICAO does not imply their adoption as law by courts and other state institutions in Iran. Therefore, the Parliament opted to approve the Annexes in 1977. However, the Annexes were voluminous, and the Parliament did not have enough resources and expertise to review that volume of technical standards. So, the Parliament assigned the task to the Cabinet to approve the Annexes. [34] Nevertheless, the latter also failed to approve the Annexes for the same reasons. Although the Cabinet tried to have the Annexes translated in the first stage, the translation task was also halted due to the lack of uniformity in adopting Persian equivalents for technical terms. For the Annexes to pass as law in Iran, it was necessary first to translate international regulations into Persian and then go through the legislative process. [35] Finally, according to the enactment, the Cabinet accepted that the Annexes (English version) be implemented by the Civil Aviation Organization (CAO), and the CAO should prepare the draft of national air standards for approval by the Cabinet later on. [36] However, despite all the efforts, the Annexes have not yet been approved as a comprehensive code of national air standards in Iran.

Iranian law faces three issues in establishing a code or a set of national air standards:

1. In Iran, the primary law in aviation is the Civil Aviation Act (CAA). Under CAA, technical air standards must be prepared in documents such as instructions and regulations. The general revision of the CAA is a necessary prelude to developing the national air standards code. The CAA was drafted almost 73 years ago, and CAA has not kept pace with the developments in aviation technologies. It was approved in 1328 (1949) AD, and now it needs revision and updating to meet the recent growth in the industry. The regulation of CAA has rarely been amended in the past years. Therefore, fundamental revisions are required in various areas, especially regarding aircraft registration and nationality, air operation, and facilities. [37]
2. In recent years, the CAO, which is in charge of air safety supervision in Iran, has tried to legalize technical air standards. Visiting the official website of the CAO indicated attempts to compile the national air standards. [38] However, the attempts have not produced comprehensive standards, only meeting the urgent needs of individual cases. First, the CAA should be revised in a cohesive plan.

Secondly, the national air standards should be seen as interconnected, like the international standards. Then air regulations and technical instructions should be established so they do not conflict with other air regulations. [39]

3. In the past three decades, several attempts have been made to revise the CAA. They then prepared a comprehensive civil aviation code, i.e., national technical air standards, which did not conclude in a successful code due to the lack of a legal structure. The lack of an administrative institution, the lack of funds for research, education, and the recruiting of technical and legal experts have severely challenged the approval of the air technical standards code. Although the CAO has two departments responsible for regulating the airline's institutional performance, they have refrained from preparing and compiling standards within the framework of the national code. Because they have always been busy solving the current problems of the aviation industry and supervising operations of the institutions within that industry, a new specific institution must be responsible for developing comprehensive national air standards. [40]

## 12. Conclusions

Progress in any field requires two primary factors: having a suitable and fair law and proper implementation of the law. Therefore, administrative work is fulfilled when it is acted according to the appropriate law. The aviation industry is young and new compared to other sectors; relatively, its laws and regulations have a short history. Its history in industrialized countries can be considered to be about a century. For this reason, aviation laws do not have the coherence and maturity of other laws, such as maritime laws. On the one hand, because the aviation industry has been evolving in the last decades according to new technologies in aviation, it witnessed significant progress and is currently moving forward at full speed. On the other hand, innovative communication and Air navigation devices are presented daily worldwide.

A key factor for the expansion of aviation is the implementation of ICAO international standards and keeping them up-to-date concerning the development of new technologies in aviation. The uniform implementation of these technical standards in aviation by all countries helps to ensure safety and improve aviation. By implementing international standards at the national and international levels, countries take an essential step in the uniformity of standards. Implementing international aviation standards by each member state requires placing them in the framework of national law.

The states must take reasonable steps regarding approving and compiling international air standards to align with the abovementioned developments. The states need to approve a national aviation safety code that is

suitable and coordinated with the recent developments in the world. Creating the infrastructures required to set the national aviation code comprehensively is necessary. Firstly, the national regulations and standards must be harmonized with international air standards, i.e., the Annexes. Then, the specific conditions of each country need to be carefully assessed to maximize the efficiency of the devised code.

### 13. References

- [1] M. Lutek, "Legal Aspects of Safety Management in Civil Aviation," *International Journal of Synergy and Research*, Vol. 7, no. 1, pp. 49-57, 2018.
- [2] M. Hamada, "International comparative legal guides, aviation law 2021; a practical cross-border insight into aviation law," *ICLC.com*, Para. 3, Sep. 15, 2022, [Online]. Available: <https://www.mhmjapan.com>, [Accessed: Sep. 15, 2022]
- [3] ICAO, "Safety Report of ICAO, A Coordinated, Risk-based Approach to Improving Global Aviation Safety," *ICAO.net*, 2021, [Online]. Available: <https://www.icao.int>. [Accessed 15 Sep. 2022].
- [4] M.Jabbari, M. Ghalandari, "ICAO Audit Program to Verify the Aviation Standards and Recommended Practices," *International Law Review*, Vol. 32, no.3, pp 384-401, 2016.
- [5] Frontex and Europol, Routledge, F. Coman-Kund, "European Union Agencies as Global Actors: A Legal Study of the European Aviation Safety Agency," Frontex and Europol, Routledge, Oxon. ISBN 9780367590901 (2018), [Online]. Available: <https://www.routledge.com>/ Accessed 15 Sep. 2022].
- [6] ICAO, "Annexes 1–18 (1974). 1st ed. International Civil Aviation Organization," Available at [http://www.icao.int/documents/annexes\\_booklet.pdf](http://www.icao.int/documents/annexes_booklet.pdf); and See Safety Management Manual (SMM) Jul. 2013, 3rd ed. International Civil Aviation Organization, [Online]. Available: <https://www.icao.int/safety/SafetyManagement>," [Accessed 15 Sep. 2022].
- [7] Y. Kareng, "International Aviation/ Airspace Law an Overview," *International Journal of Law Reconstruction*, "Vol 4, no 1, April, pp. 56-68, 2020.
- [8] P. H. Sand, "An Historical Survey of International Air Law Before the Second World War" (PDF). *McGill Law Journal*. 7 (1): 24–42. Archived from the original (PDF) 5 March 2016, [Online]. Available: <https://www.iata.org/en/training/courses/aviation-law-regulation/tall18/en/>, [Accessed 15 Sep. 2022].
- [9] R.L.R. Abeyratne, "The Legal Status of the Chicago Convention and its Annexes", *Journal Air Law* vol. 19, pp. 113-123, no. 3, 1994.
- [10] G. N. Tompkins, "uEnforcement of Aviation Safety Standards", *Ann. Air & Space Law*, vol. 21, no 2, pp. 319, 321. (1995).
- [11] McGill University, M. Boteva, "A New Century and a New Attitude towards Safety Oversight in Air Transportation," Master's Thesis, McGill University, Nov 2000, [Online]. Available at <https://www.mcgill.ca/iasl/about/alumni/thesisllm>. [Accessed 15 Sep. 2022].
- [12] H. Wassenbergh, "Safety in Air Transportation and Market Entry - National Licensing and Safety Oversight in Civil Aviation", *Journal. of Air & Space Law*, vol. 23, no. 2, pp.74- 82. 1998.
- [13] P.P.C. Haanappel, *Ratemaking in International Air Transport: A Legal Analysis of International Air Fares and Rates*, Kluwer, 1978
- [14] L.E. Black, "Uniformity in Air Safety Uniformity in Air Safety Regulation: Cooperative Federalism Applied", *15 Journal of Air Law. & Commerce*. vol. 15, no.2, pp. 181-195, 1948.
- [15] T. McCracken, "Special Problems in Aeronautic Legislation," *Air LawReview*, vol. 2, no. 1, pp. 479- 482, 1931.
- [16] L. E. Gesell, *Aviation and the Law* (2nd ed.). Chandler, AZ: Coast Aire Publications, 1993.
- [17] R.J. Lofaro, K.M.Smith, "Rising Risk? Rising Safety? The Millennium of Air Travel" *Transportation Law Journal*, vol. 28, no.1, pp. 205-216. 1998.
- [18] D. W.Freer, "ICAO at 50 Years: Riding the Flywheel of Technology", *ICAO Journal*, vol. 49 no. 3, pp.19-32. 1994
- [19] J. Huang, *Aviation Safety through the Rule of Law*, Kluwer law international, 2009.
- [20] M.N Matte, *Treatise on Air - Aeronautical Law*, CASL-McGill University, 1981.
- [21] M. Milde, "Enforcement of Aviation Safety Standards – Problems of Safety Oversight" *45 Journal of Air and Space Law*, vol. 45, no. 3, 1996.
- [22] D. W. Freer, "A Convention is signed and ICAN is born? 1919 to 1926," *ICAO Journal*, vol. 41, no. 5, pp. 44-46, 1986.
- [23] A. J. Broderick, J. Loos, "Government Aviation Safety Oversight-- Trust, But Verify," *Journal Air Law and Commerce*, vo. 67, no. 4, pp. 1034-1038,
- [24] ICAO, "Assembly Resolution A29-6, ICAO Doc 9600, A29-RES," 2002, [Online]. Available: <https://www.icao.int/assembly-archive/Session29/A.29.RESOL.9600.EN.pdf> [Accessed 15 Sep. 2022].
- [25] L. Weber, "Convention on International Civil Aviation – 60 Years," *German Journal of Air and Space Law*, vol. 53, no. pp. 289-311, 2004.
- [26] B. Cheng, *The Law of International Air Transport* London: Stevens and Sons Ltd, 1962.
- [27] Assembly Resolution A10-36: Journey Log Book, in ICAO Doc 7707, A10-P/16 at 51. S
- [28] T Buergethal, "Law-Making in the International Civil Aviation Organization," *Syracuse University* 1969.
- [29] P.P.C. Haanappel, *The Law and Policy of Air Space and Outer Space: A Comparative Approach*, Kluwer Law International, 2003.
- [30] ICAO Doc. 9859, *The Safety Management Manual (SMM)*.
- [31] ICAO, *Doc 9626 Manual on the Regulation of International Air Transport Third Edition*, Sep. 2018, [Online]. Available at: <https://www.icao.int/sustainability/en.pdf>, [Accessed 15 Sep. 2022].
- [32] M. Zyllicz, *International Air Transport Law*, Martinus Nijhoff Publishers, 1992.
- [33] M. Hailbronner, "Topical Problems of International Aviation Law" *Law and State Journal*, vol. 8, no. 1, pp. 96-102. 1973.
- [34] "The Law allowing the approval of technical regulations and related rules International Civil Aviation Convention (Chicago Convention)", approved 4.8.1356 Available at <https://rc.majlis.ir/fa/law/show/95056>
- [35] Islamic Parliament Research Center Of The Islamic Republic of IRAN, "The Enactment of how Regulæ and conclude of international agreements" 2022, [Online].



- Available at <https://rc.majlis.ir/fa/law/show/114276>, [Accessed 15 Sep. 2022].
- [36] H. Kazemi, Public International Air Law, SAMT Publishing, 2018.
- [37] A. Sadeghi, Neshat and M. Sadeghi, "A Criticism on the Civil Aviation Law and the Necessity of Enactment for a New Law on Aviation Affairs," Private Law Studies Journal, Vol. 49, no. 2, pp. 329-348, 2019.
- [38] "I.R. Iran Civil Aviation Authority, "Rules and Regulations," 2022, [Online]. Available: <https://regulation.caa.gov.ir/rules>, [Accessed 15 Sep. 2022].
- [39] A. Hajvaliei, "Civil Aviation Law: law infrastructure in air transportation industry," in First National Conference on Transport Infrastructure. 2012.
- [40] Kazemi H., Codification of air law and regulations is a must for CAO of Iran, Conference of Iranian Aerospace Society, 2008.