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Global Governance:

Goals and Lessons for AI

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The International Civil Aviation Organization (ICAO)

Authored by David Heffernan and Rachel Schwartz

Purpose

International commercial air transport is a complex and constantly evolving industry, the success and vitality of which are attributable in significant part to the role of the International Civil Aviation Organization (ICAO), a United Nations (UN) body. The complex and high-stakes nature of safely moving people and goods around the world requires a robust international governance system that provides legal and operational stability and predictability. Since its conception, ICAO has served the civil aviation sector as the industry's global standard-setting agency and facilitator of cooperation among nations in furtherance of a coordinated approach to the fundamental issue of air safety.

History

The Chicago Convention

ICAO is the product of an extraordinary World War II era initiative that led to the signing of the Chicago Convention, an international treaty governing civil aviation. In September 1944, 52 nations represented by over 950 delegates convened in Chicago to negotiate the scope and terms of such a treaty. The conference's purpose was to "make arrangements for the immediate establishment of provisional world air routes and services" and "to set up an interim council to collect, record and study data concerning international aviation and to make recommendations for its improvement."[i] On December 7, 1944, the Chicago Convention was signed and opened for ratification Member States. Today, 193 nations are Member States of the Convention.[ii]

The Chicago Convention specifically envisioned an immediate post-war era in which civil aviation would play an essential role in forging a new global economic and trade order, including between nations formerly at war. It was the essence of that transition from devastating war to a peaceful and prosperous future that weapons of war (aircraft) could be repurposed for the movement of people and goods around the world based on an orderly, globally accepted system of rules, reciprocal recognition, and mutual accommodations among nations. As the Convention's preamble states: "the future development of international civil aviation can greatly help to create and preserve friendship and understanding among nations...to avoid friction and to promote the cooperation between nations... upon which the peace of the world depends."[iii]

The Chicago Convention covers a wide range of topics, including the sovereignty of States over their own airspace and the rights of aircraft of one State to overfly the territory of other States, to make technical stops in other States, and to take on and discharge passengers and cargo on a charter basis at airports in other States. The Convention also addresses regulation of aircraft by nationality (the State in which it is registered), air navigation, licensing and certification of aircraft and crew, the development of safety standards and practices, and the settlement of disputes between States.

ICAO

The Chicago Convention established ICAO as an international governing body for civil aviation. ICAO's main functions include (i) developing and revising matter-specific Annexes to the Convention that establish Standards and Recommended Practices (SARPs) for aviation safety and security, (ii) addressing issues of access to airspace and airports in other countries, (iii) serving as a clearinghouse for cooperation and discussion on civil aviation issues, and (iv) providing a forum and procedures for resolution of disputes between States.

Evolution

Over time, ICAO has sought to implement the Chicago Convention's commitment to create a unified post-war era civil aviation sector, with a primary focus on aviation safety and security. As described below, ICAO has had important successes but has also struggled with significant challenges.

ICAO's main achievements

Over the past nearly 80 years, ICAO has proven its durability. Its greatest successes have been in aviation safety. ICAO's status as a UN body underscores its authority to bring Member States together to address often-complex safety problems. ICAO has developed a *modus operandi* whereby Member States can participate at a high level in initially establishing policy objectives and ultimately approving specific measures for global implementation, while leaving the technical "sausage making" of SARP developments to industry experts who work on the details in a less politicized (but never entirely apolitical) environment. ICAO's workings are relatively transparent and based on cooperation among Member States, all of whom have a vested interest in global aviation safety and the relatively free movement of aircraft.

The following are examples of SARPs that Member States have implemented:

- The establishment of standards for an airborne traffic alert and collision avoidance system that interrogates air traffic control transponders in nearby aircraft and uses computer processing to identify and display potential and predicted collision threats (i.e., the automated system that alerts a pilot in flight to "pull up" in response to a risk of collision).[iv]

- The development of standards for Flight Data Recorders (FDRs), which provide critical information for investigators in understanding why an aircraft crash may have occurred.[v]

Member States, which often cooperate on accident investigations, have a strong common interest in the gathering and preservation of FDR data in the event of an accident, so the establishment of uniform FDR standards continues to be of great importance for ICAO.

- The creation of principles and instructions governing the international transport of dangerous goods by air, such as the now ubiquitous transport of highly flammable lithium batteries onboard civil aircraft.[vi]

- The creation of the Safety Management System (SMS)/State Safety Program (SSP),[vii] which set forth comprehensive, systematic, and cohesive approaches to managing safety (i.e., structures, accountabilities, policies, and procedures). The FAA and other Member State regulators now require SMS compliance for all large commercial air carriers.

- The development of aircraft noise standards, which provide maximums for the noise levels that civil aviation aircraft may emit. These standards have been adopted by the FAA for the new type certification of jet and turboprop aircraft.[viii]

ICAO's main challenges

The challenges ICAO faces include the inherently political nature of governance, deliberation, and compromise among 193 nations. Because ICAO lacks enforcement authority, it relies on Member States to comply with the technical guidelines it produces. In practice, enforcement occurs bilaterally and multilaterally between and among Member States. ICAO's processes can be hamstrung by bureaucracy as well as intergovernmental politics. This impedes ICAO's ability to respond more nimbly and effectively to urgent aviation safety problems. For example, it falls to individual Member States to "ground" aircraft in response to safety problems (e.g., the Boeing 737 MAX)[ix] or impose specific retaliatory or restrictive measures on a Member State (e.g., the response to Russia's invasion of Ukraine).[x]

ICAO also has struggled (but arguably has achieved some success based on international compromise) to develop a global approach to commercial aircraft emissions, which account for about 2.5% of global carbon emissions. After the EU grew impatient with the pace of progress to address the issue at ICAO, it developed its own initiative, an Emissions Trading Scheme (ETS), that would apply to aircraft of non-EU Member States.[xi] ICAO's compromise, the so-called Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) provides for a multi-year, phased process for Member States to meet certain limits on aircraft carbon dioxide emissions, culminating in net-zero emissions by 2050.[xii]

CORSIA remains controversial, however, with the EU threatening to reinstate the ETS if CORSIA is not implemented on schedule.[xiii] China and Russia, by contrast, have refused to commit to participate in Phase One of CORSIA (which will run through 2026 and for which participation is voluntary), while maintaining that they will participate in Phase Two (which will begin in 2027 and for which participation will be mandatory).[xiv] China and Russia argue that a requirement to meet certain targets within CORSIA's timeframes would unfairly penalize developing countries.[xv] China's refusal to fully participate in CORSIA could make it more difficult to ensure the participation of other countries.

While ICAO has ultimately achieved an effective role in safety regulation, it lacks a similar role in the areas of economic/trade and security relations among nations relating to air transportation. Nations generally negotiate bilaterally to exchange scheduled air service "traffic rights," which has produced a system that lacks uniformity and arguably is excessively protectionist (e.g., the airline industry remains subject to varying restrictions on foreign or cross-border ownership, which do not apply to most other global industries). Nations have also adopted a more unilateral approach to aviation security, with the events of September 11, 2001, having accelerated that trend.

For example, the United States has established its own specific requirements for passenger and cargo security screening. If an airline of a foreign country that is also a Member State wishes to fly passengers to the United States, it must gather and transmit specific passenger data to US authorities in advance of the flight and submit the aircraft and its passengers to US screening requirements. If a foreign airline or its government refuses to comply, the United States may refuse entry to that airline—regardless of the Convention's provisions on providing access to airspace and airports. Other Member States have established their own security screening and entry requirements.

Governance

ICAO's governance structure

ICAO has three main bodies that serve to carry out its mission and purpose: the Assembly, the Council, and the Secretariat.

- The Assembly is ICAO's supreme body and is composed of delegations from ICAO's 193 Member States. The Assembly meets every three years to set ICAO's agenda, vote on major policy initiatives, and elect Member State representatives to the Council. Industry and civil society groups, along with various regional and international organizations, also participate in these events in their capacity as "Invited Organizations."

- The Council is ICAO's governing body, comprising of representatives from 36 Member States appointed by the Assembly to serve three-year terms. After the Assembly approves a policy initiative, the Council convenes expert panels and working groups to develop a SARP. These industry experts may be recommended by Member States but do not represent the interests of any particular State; rather, they provide objective technical expertise and recommendations on how best to address a particular safety issue.

Any new SARP recommended by an expert panel is subject to review by the Secretariat (see below) and approval by the Council and ultimately the Member States through the Assembly. In recent years, the Council also has developed aircraft CO_2 emissions reductions measures, at the request of the Assembly.

- The Secretariat is ICAO's professionally staffed executive body. It is led ICAO's Secretary General and is responsible for managing ICAO's day-to-day operations.

SARPs

SARPs are the primary tool for implementation of ICAO-approved safety standards and practices. "Standards" are presumptively mandatory: specifications "the uniform application of which is recognized as *necessary* for the safety or regularity of international air navigation and to which...States will conform in accordance with the Convention."[xvi] "Recommended practices," meanwhile, are hortatory: specifications "the uniform application of which is recognized as *desirable* in the interest of safety, regularity or efficiency of international air navigation, and to which...States should endeavor to conform in accordance with the Convention."[xvii]

SARPs may address the full range of subjects covered by the ICAO Annexes, including pilot and crew licensing, rules of the air, meteorological services, air navigation and air traffic control services, safety management, aircraft operations, aircraft airworthiness, aircraft nationality and registration, search and rescue, accident and incident investigation, airport regulation, the transport of dangerous goods by air, and environmental protection and security issues.

The ICAO Council, which meets three times annually, may propose a safety issue for review. (Such a proposal may also originate in the ICAO Assembly, which may direct the proposal to the Council.) The Council then refers a proposal to ICAO's Air Navigation Commission (ANC).

The ANC is comprised of 19 members who are nominated by Member States and appointed by the Council. The ANC has 17 technical panels with specific subject-matter expertise (e.g., safety management, remotely piloted aircraft systems, dangerous goods). The relevant ANC technical panel will then conduct research as a basis for potentially drafting a SARP for the ANC's review. If the ANC decides that the SARP is warranted, the ANC will finalize the SARP, consulting informally with the Secretariat (while the Secretariat's approval of a SARP is not required, the Secretariat provides technical, legal, and administrative support). The ANC then submits the proposed SARP to the Council where adoption requires the approval of two-thirds of the Council's members. Thereafter, the SARP is distributed to the Member States, which have three months in which to approve or disapprove the SARP.

Unless a majority of Member States register their disapproval, the SARP becomes effective four months after its adoption by the Council. Member States may lodge "differences" with ICAO (i.e., the intention of a Member State to deviate from some aspect of the SARP), however, practically speaking a Member State that has notified a difference is motivated to eventually harmonize its national regulations, as one State's failure to conform to a particular standard may form a basis for other States to eventually withhold approvals for the non-conforming State's aircraft operators. After ICAO adopts a SARP, Member States are charged with implementing it into their national laws and regulations. This process varies from State to State. In the United States, the FAA (or another federal agency, as may be applicable) generally incorporates SARPs directly into its regulations. For example, after ICAO adopted a SARP regarding aircraft engine emissions, the Environmental Protection Agency (EPA), which regulates engine emissions, conducted a rulemaking to incorporate the SARP into its regulations. US legal and policy requirements pertaining to agency rulemaking (e.g., public notice and comment requirements) may delay full US implementation of a SARP.

Member States also pursue uniformity of SARP adoption and implementation via bilateral and multilateral (e.g., regional) aviation safety agreements.

Broader global governance landscape

Bilateral aviation safety agreements

The United States and other Member States have entered into bilateral aviation safety agreements (BASAs) in an effort to achieve: 1) broader compliance with ICAO Annexes and SARPs; and 2) as a related matter, a greater degree of consistency between the safety regulations of Member States. BASAs provide for bilateral cooperation in a wide variety of safety areas, including aircraft and crew licensing, air navigation, aircraft maintenance, and flight operations. BASAs often reference and incorporate SARPs or, more generally, adherence to ICAO standards. The United States and other Member States use BASAs as a way to harmonize their respective safety regulatory frameworks. In some cases, such as between the United States and the European Union, each Party may defer to the other's licensing, compliance, and other safety determinations. As Article 5 of the US-EU BASA states: "[T]he Parties agree that each Party's civil aviation standards, rules, practices and procedures are sufficiently compatible to permit reciprocal acceptance of approvals and findings of compliance..."[xviii]

Dispute resolution

Under chapter XVIII of the Chicago Convention, the ICAO Council provides a forum for the resolution of disputes between Member States relating to the interpretation or application of the Convention and its Annexes. In practice, however, such disputes are rarely brought to ICAO and are even more rarely adjudicated.

This is because bilateral air transport agreements between Member States generally include rights and procedures both informal (e.g., intergovernmental consultations) and formal (e.g., arbitration) that offer a more direct and efficient path to dispute resolution.

Under ICAO dispute resolution procedures, Member States must first attempt to resolve a dispute by direct negotiation. Only after failed negotiations may a Member State seek resolution by a decision of the ICAO Council. A Member State may appeal the Council's decision to an ad hoc arbitral tribunal or the Permanent Court of International Justice. The ICAO dispute resolution process is protracted and slow moving. In most cases, Member States resolve a dispute before the Council renders a decision, but in some cases a Member State may submit a dispute to ICAO in an effort to apply additional pressure on another Member State to resolve the matter.

ICAO does not have direct authority to impose sanctions regarding the specific subject matter of a dispute, but individual Member States may use a Council decision as a basis for refusing access to its airspace or territory. The ICAO Assembly may suspend the voting rights of a Member State in the Assembly following a Council decision that the Member State is in "default" of its obligations under the Convention.

Compliance and enforcement

ICAO does not directly enforce SARPs; rather, it falls to Member States, individually and via bilateral and multilateral agreements, to ensure compliance. ICAO, however, plays a role in "assisting" Member States to comply with ICAO's Annexes and SARPs, including by conducting safety audits of Member States. ICAO's auditors examine Member States' legislation and regulations for compliance with ICAO Annexes and SARPs. ICAO's audit reports, which are published on ICAO's website, identify any significant safety concerns. ICAO does not conduct audits of airlines or airports; such regulation falls to the civil aviation authorities of individual Member States.

Although ICAO does not have authority to enforce compliance with its Annexes and SARPs, Member States may use information and findings contained in ICAO audit reports to improve their safety oversight regimes. Some Member States also audit other states' compliance with ICAO standards and impose restrictions on access to national airports and air service markets based on a finding of deficient compliance. The United States and the EU have adopted different approaches to auditing Member States' compliance with ICAO standards. The FAA has established an International Aviation Safety Assessment (IASA) program under which it audits and then assigns ratings to other Member States, either a Category 1 rating (complies with ICAO standards) or Category 2 rating (non-compliant). The EU, by contrast, asks countries to audit themselves to confirm their compliance with ICAO standards. The EU maintains a blacklist of airlines determined to have serious safety deficiencies, prohibiting those airlines from operating to or within the EU.

The FAA's IASA program's audits and country ratings have a significant impact on international commercial air transportation because the United States is the world's largest air service market. For example, in May 2021, the FAA downgraded Mexico from a Category 1 to Category 2 rating following an FAA audit finding that Mexico was not in compliance with ICAO standards. Consequently, the FAA prohibited Mexican airlines from introducing new services to the United States or engaging in codesharing with US airlines, where a US airline would sell tickets for travel on a Mexican airline under the US airline's two-letter code. The FAA allowed Mexican airlines to continue operating services to/from the United States that were already in place at the time of the downgrade. In September 2023, the FAA restored Mexico to Category 1 status. In doing so, the FAA noted that "[w]ith a return to Category 1 status, [Mexican airlines] can add new service and routes to the US, and US airlines can resume marketing and selling tickets with their names and designator codes on Mexican-operated flights."[xix]

The FAA, in announcing the restoration of Mexico's Category 1 rating, emphasized how the FAA had made its "expertise and resources" available to provide "technical assistance" to enable Mexico's civil aviation authority to achieve compliance with ICAO standards.

Conclusion

To paraphrase Winston Churchill, ICAO, like democracy, is the worst possible governance system—except for all of the alternatives. Although imperfect and limited, particularly in non-safety areas, the ICAO regulatory scheme enabled the post-World War II development of a global air transport industry in which weapons of war (aircraft) were converted into vehicles for the safe global movement of people and goods, for the greater economic and social benefit of the world.

In some respects, ICAO's greatest success is its endurance. It has survived for nearly 80 years and there is no discussion about replacing or abandoning it. ICAO will likely endure and continue to provide leadership in the essential area of aviation safety for the foreseeable future. In other areas, however, nations are likely to forge ahead based on unilateral action (e.g., security) or initiatives that are the product of regional coordination or understandings between nations (e.g., the exchange of air traffic rights and the related issue of rules governing the ownership and control of airlines).

The environment may prove to be a bellwether of ICAO's future. While ICAO has touted CORSIA as "the first time that a single industry sector has agreed to a global market-based measure in the climate change field," it represents an uneasy compromise between nations that want to move more quickly or slowly to address aircraft emissions. If that compromise does not hold on what has become one of the most challenging points of controversy in international aviation, Member States may revert to unilateral approaches, which in turn could undermine ICAO's authority and effectiveness as an aviation safety regulator.[xx]

i. *See* ICAO, "Chicago Conference Introduction," International Civil Aviation Organization, https://www.icao.int/ChicagoConference/Pages/chicago-conference-introduction.

ii. *See* "About ICAO," International Civil Aviation Organization, https://www.icao.int/about-icao/Pages/default.aspx.

iii. Convention on International Civil Aviation, "Preamble," International Civil Aviation Organization, https://www.icao.int/publications/documents/7300_orig.pdf.

iv. *See* FAA Advisory Circular No. 20-151C.

v. *See* 81 Fed. Reg. 96,572 (Dec. 30, 2016).

vi. *See* "Department of Transportation Pipeline of Hazardous Materials Safety Administration," ICAO, https://www.phmsa.dot.gov/international-program/international-civil-aviation-organization.

vii. *See* "Safety Management System Frequently Asked Questions," Federal Aviation Administration, https://www.faa.gov/about/initiatives/sms/faq.

viii. *See* "Details on FAA Noise Levels, Stages, and Phaseouts," Federal Aviation Administration, https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/airport_aircraft_noise_issues/levels.

ix. Ken German, "2 Years After Being Grounded, the Boeing 737 Max is Flying Again," CNET, June 19, 2021, https://www.cnet.com/tech/tech-industry/boeing-737-max-8-all-about-the-aircraft-flight-ban-and-investigations/.

x. Allison Lampert, "Russia Loses U.N. Aviation Council Seat in Rebuke," Reuters, October 1, 2022, https://www.reuters.com/world/europe/russia-notre-elected-un-aviation-agencys-36-member-council-2022-10-01/.

xi. "Reducing Emissions From Aviation," European Commission, https://climate.ec.europa.eu/eu-action/transport/reducing-emissions-aviation_en.

xii. "CORSIA Fact Sheet," International Air Transport Association, https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---corsia/.

xiii. Rafael Schvartzman, "EU ETS Reform Destabilizes International Consensus for Aviation Carbon Reductions," International Air Transport Association, April 18, 2023, https://www.iata.org/en/about/worldwide/europe/blog/eu-ets-reform-destabilizes-international-consensus-for-aviation-carbon-reductions/.

xiv. Allison Martell and Allison Lampert, "China Denounces U.N. Aviation Emissions Plan in Blow to Industry Efforts," Reuters, September 24, 2019, https://www.reuters.com/article/us-un-aviation-china/china-denounces-u-n-aviation-emissions-plan-in-blow-to-industry-efforts-idUSKBN1W938W.

xv. Id.

xvi. "ICAO Annex Forward: SARPs Definition and Actions," International Civil Aviation Organization, https://www.icao.int/Meetings/AMC/MA/Eleventh%20Air%20Navigation%20Conference%20(ANConf11)/anconf11_wp142_app_en.pdf.

xvii. Id.

xviii. "U.S. – European Union Safety Agreement," Federal Aviation Administration, https://www.faa.gov/aircraft/air_cert/international/bilateral_agreements/eu.

xix. "Federal Aviation Administration Returns Mexico to Highest Aviation Safety Status," Federal Aviation Administration, September 14, 2023, https://www.faa.gov/newsroom/federal-aviation-administration-returns-mexico-highest-aviation-safety-status.

xx. Id.