



THE ALASKA AIRLINES INCIDENT: BOEING 737-9 MAX

On 5th January 2024, the aviation industry was rocked by an incident involving an Alaska Airlines Boeing 737-9 MAX. The aircraft, which was flying the PDX-ONT route on flight AS-1282, had to make an emergency landing when the cabin depressurized as a result of a fuselage part coming loose. This event, which has been making headlines in the international press for weeks, has reignited concerns about this model, raising important questions related to safety and the responsibility of the parties involved in its manufacture.

The U.S. civil aviation authority, the Federal Aviation Administration (FAA), initiated an investigation to clarify the cause of the event, issuing an Emergency Airworthiness Directive (EAD)¹, in which it ordered the inspection of a total of 171 Boeing 737-9 MAX and prohibited their operation until the completion of the investigation process.

For its part, the European Union Aviation Safety Agency (EASA) adopted this Directive, despite the fact that no airline in any Member State operates aircraft with the specific configuration achieved by the EAD and, therefore, no 737-9 MAX aircraft operating in Europe have been grounded².

Given the importance of this incident for the aviation industry, in our January newsletter we address some of its implications and briefly outline the certification processes to which aircraft are subjected, with particular reference to the two main Western civil aviation authorities (EASA and the FAA)³.

REGULATORY FRAMEWORK AND COMPETENT ORGANIZATIONS IN AIRWORTHINESS MATTERS

First of all, it should be recalled that the ability or suitability of an aircraft to fly safely in airspace, understood as safety, is the basic priority of aviation. For this reason, in order to guarantee their performance and safety or airworthiness, aircraft and their systems are subject to rigorous verification processes of their design, maintenance and operation characteristics. However, how is airworthiness determined?

To answer this question, it is essential to contextualize the aeronautical activity at the international level, since the industry has been working since its inception on the development of a regulation that seeks to harmonize

the design and operation of aircraft, with the ultimate goal of ensuring their operational safety.

In this regard, bodies such as the International Civil Aviation Organization (ICAO) have played a crucial role in the development of principles and regulations governing airworthiness globally. Specifically, through the publication of the annexes to the 1944 Chicago Convention, ICAO has established specific provisions related to airworthiness and aircraft operation, which are adopted and implemented by Member States⁴.

Thus, this development of soft law has been crucial for aeronautical authorities such as EASA and the FAA to develop standards and procedures to enhance aviation safety. This framework of reference has allowed the integration of recommended practices in their regulations, strengthening the safe operation of aircraft.

EASA is the authority responsible for the supervision, certification and approval of products and organizations in the field of airworthiness within the European Union and associated countries⁵. Specifically, through the issuance of certifications of "design organizations" and "production organizations", called Design Organization Approval and Production Organization Approval (DOA and POA, respectively), EASA ensures that the entities responsible for the design and manufacture of aeronautical products comply with the rigorous standards and regulations established by the Agency to ensure air safety. To this end, EASA continues to develop procedures that must be applied throughout the regulatory process, thereby maintaining the highest standard of safety at all times⁶.

The FAA is in charge of issuing airworthiness certificates and supervising compliance with safety regulations by aircraft manufacturers and operators within the United States of America, developing, along the same lines as the European Agency, its own regulations, known as Federal Aviation Rules (FAR).

Notwithstanding the above, it is important to note that there are significant differences between the certification procedures of each of them. For example, the FAA allows certain activities to be delegated to authorized private individuals who, in turn, may be employees of the manu-

¹ For better reference, we refer to the [Emergency Airworthiness Directive](#), published on January 6th, 2024, and the [updates published by the FAA](#).

² For further reference, we refer to the [updates published by EASA](#).

³ This newsletter is not intended to be, nor does it constitute, an exhaustive study of the aeronautical regulations existing in all countries, referring, for the sake of brevity and mainly, to the European regulations.

⁴ We refer, among others, to Annex 6 on aircraft operation; Annex 8 entitled "airworthiness"; or Annex 13 on aircraft accident investigation.

⁵ The structure of EASA regulations is arranged around Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20th February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency; Regulation (EC) No 748/2012 of 3rd August on certification of aircraft and products, and design and production organizations; Regulation (EC) No 1321/2014 of 26th November on the continuing airworthiness of aircraft, products, parts and appliances, and approvals to organizations and personnel involved in these tasks; and Commission Regulation (EU) No 2015/640 of 23rd April on additional airworthiness specifications for certain type of operations and amending Regulation (EU) No 965/2012.

⁶ EASA Management Board Decision N° 01-2022 of 2nd May 2022 on the procedure to be applied by EASA for the issuing of opinions, certification specifications and other detailed specifications, acceptable means of compliance and guidance material (Rulemaking Procedure), and repealing Management Board Decision No 18-2015, known as "EASA DMB 01-2022".



facturer, which is not the case, at least to the same extent, at the European level.

The American procedure described above raises questions about the appropriateness of allowing the manufacturer's in-house personnel to be responsible for certifying their own aircraft⁷, especially in view of recent accidents and incidents involving the aircraft of the leading American manufacturer.

BOEING INCIDENTS IN RECENT YEARS: FROM THE BOEING 737-8 MAX TO THE 737-9 MAX

The Boeing 737 MAX family has been constantly criticized and cause for concern since the two plane crashes of LionAir and Ethiopian Airlines, both of which occurred on a 737-8 in 2018 and 2019, respectively. And this concern has been contributed to by this new incident, occurring this time on the 737-9 MAX model, which was designed to offer greater passenger capacity and efficiency on long-range routes, due to the fact that it shares quite a few characteristics the 737-8 MAX from the same family.

While it is not our intention to expand on the reasons that led Boeing to carry out a redesign of the 737-8, it is worth remembering that, at the time, the FAA, as the aviation authority, inevitably took a crucial role in the investigation of the two accidents in 2018 and 2019 alongside the National Transport Safety Board (NTSB), and determined that the MCAS (Maneuvering Characteristics Augmentation System) software, which had been designed to prevent loss of lift in certain flight conditions, was incorrectly activated due to erroneous sensor data, causing the aircraft to lose control⁸.

As a result of those accidents, 737-8 MAX operations were suspended worldwide, and extensive revisions and modifications were made to the aircraft's design and software.

This, not surprisingly, triggered an unprecedented crisis, not only for Boeing, but also for aviation regulatory agencies worldwide, as major flaws were detected in the certification process of the aircraft, including a lack of transparency by the manufacturer on the existence and functionality of the MCAS and poor oversight by the FAA. Possible similarities in these types of contributing factors in the flight 1282 incident remain to be elucidated.

On the other hand, we must emphasize that this type of incidents and accidents cause damages of great magnitude, referring first of all to personal damages, but also to material, financial and reputational damages for the airlines. These damages, whether or not they are insured, and whether or not they are borne by the airlines, should not occur in an industry as important as the air transport industry, which above all has the duty to provide a safe operation for passengers.

In relation to the above, we must insist that the supervisory authorities of the aviation industry must focus and succeed in prevention and that, therefore, reactive measures such as the actions taken ex post by the FAA after the last 737-9 MAX incident, such as the obligation to put all affected aircraft in AOG, or the measures published last January 24, 2024, are clearly insufficient and represent a breach of their obligations. In fact, one of the latest actions ordered by the FAA, limiting 737-9 MAX production to ensure accountability and full compliance with required quality control procedures, is highly illustrative of the authority's failure in its duties to date.

Finally, it is worth recalling that, in the coming weeks, a report on the safety review culture at Boeing, which has been under development since 2023 by a panel of experts from the FAA and NASA, among others, is expected to be available, mandated by the FAA itself.

This report promises to be crucial to better understand safety management at Boeing and its impact on the aeronautical field, globally. Moreover, in an environment where automation within aircraft design and production, the implementation of Fly-By-Wire (FBW) systems in



aircraft operation and the consequent reduction in pilots' ability to intervene in automated functions are becoming the norm, the relevance of this type of study is even greater. We will have to be alert to the challenges that these trends pose in the field of aviation safety.

CONCLUSIONS

Aviation safety must be a top priority for all parties involved in the aviation industry, and we all have our responsibility when situations such as those described in this document arise.

Therefore, it is necessary to conclude by highlighting that, as the FAA investigation progresses, the cause of the last incident of flight AS1282 should be elucidated and responsibilities and areas for improvement should be clarified, which should address the questions raised in this newsletter on the certification and supervision of commercial aircraft, as well as on the safety culture in the aviation industry.

Passenger safety and the integrity of the world's aircraft fleet are undoubtedly a priority, so it is imperative that immediate action be taken to address any deficiencies that could compromise the safety of commercial flights.

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⁷ As provided for in the Federal Aviation Act, the designees act as surrogates for the FAA to review aircraft design, production quality and airworthiness (FAA Order 8110.37E (DER Handbook) and FAA Order 8110.8D (Designee Management Handbook). DERs will follow the FAA certification procedure set forth in FAA Order 8110.4C "Type Certification".

⁸ For better reference, we refer to the [report published by the FAA](#), dated 18th November 2020.