

IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)
Commercial Spaceflight Safety and Emerging Issues (1)

Author: Prof. Katarzyna Malinowska
Kozminski University, Poland, katarzyna.malinowska@bmsp.com.pl

Dr. Aleksandra Bukala
Polish Space Agency (POLSA), Poland, aleksandra.bukala@polsa.gov.pl

Ms. Marta Balcer
Polish Space Agency (POLSA), Poland, marta.balcer@polsa.gov.pl

UNREACH FOR THE STARS- THE USE CASE OF A SATELLITE LAUNCH FAILURE AND ITS
SAFETY OF COMMERCIAL FLIGHTS IMPLICATIONS

Abstract

Since the first artificial satellite launch attempts humanity has learned that this process is particularly complex and adventurous. While conducting space activities, a possible failure could occur during all the stages of a space mission, starting from the design, up to the launch phase or operations in orbit. One of the most recent cases of a mission failure took place on the 9th of January 2023, when the first ever satellite mission launched from UK territory with a novel launch concept (air-launch) failed and lost all its payload, including two satellites (Stork 6 and Aman) produced by Polish company Sat Rev ('UK launch failure'). The UK launch failure has raised numerous questions not just of technical safety nature but also as regards the reliable business model, regulatory framework, as well as licensing, and supervision thereof. These questions are particularly pertinent in view of the New Space increasing activity in emerging space countries and new types of space and suborbital activities. They need an interdisciplinary approach combining the economic, legal, and policy perspectives. Thus, the authors aim to analyze the UK launch failure as a case study concerning the launch options for emerging space nations, ensuring the development, but also safety of commercial space flights, as well as respect the interest of the State, and of the general public in the case of a spaceflight failed attempt. The paper analyses and compares international and domestic space regulatory frameworks of countries that adopted space legislation such as the UK, and those which have not adopted it (e.g. Poland), and investigates the impact of the legislation or lack thereof on the public safety and space sector as well as on the risk exposure of the launching State. This is of special significance in view of the authorization, and supervision requirements as well as the liability for space damage, also in case the given activity is qualified as suborbital. The objective of the authors is to identify and evaluate identified risks and challenges from various perspectives, including legal, economic, and technical. Particular attention will be given to comprehensively regulated licensing regimes such as those of the United Kingdom (including p. ex. detailed assessment of safety and security considerations as well as an environmental assessment). Attention will also be focused on the impact the industrial good practices may have as a bottom-up tool for regulating space flights in case of missing (hard law) legislation.