

## Stream 1

### **UNMANNED AIRCRAFT SYSTEMS: THE AVIATION FOR THE NEXT GENERATION**

Aviation is undergoing a fundamental change – one that is more disruptive than anything before. We are no longer talking about gradual improvements to our well-organized aviation system; the focus is now on how to avoid turning it entirely on its head.

Remote technologies have blossomed in the last few years, generating numerous ideas as to what can be done with drones, and providing incredible opportunities for technology developers, entrepreneurs, scientists, and police and fire fighters, among others.

The economic benefits of Unmanned Aircraft Systems (UAS) notwithstanding, they pose safety concerns for regulators the world over, whether deployed for recreational or other purposes.

The civil aviation authority is responsible for, inter alia, ensuring aviation safety and protecting the public from aviation hazards. Operators of aircraft, both manned and unmanned, are required to operate safely. The rapid rise of UAS raises new challenges that were not considered in historic aviation regulatory frameworks. Before devising any regulatory framework for UAS operations, the regulator should understand and assess the UAS situation in the State in which it operates.

## Stream 2

### **DANGEROUS AIR CARGO**

Billions of dollars' worth of dangerous goods are shipped as cargo by air each day. These goods, if not handled and transported carefully, can pose a significant threat to aviation safety. The May 11, 1996 crash of ValuJet Flight 592 is a sobering reminder of this. One hundred and ten lives were lost that day when a fire, initiated by the actuation of chemical oxygen generators which were improperly prepared, packaged, and identified, caused the aircraft to crash into the Florida Everglades.

The international transport of dangerous goods by air is governed by Annex 18 to the Convention on International Civil Aviation – the Safe Transport of Dangerous Goods by Air. These broad provisions are amplified by the detailed specifications of the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284, “Technical Instructions”).

Annex 18 and the Technical Instructions define dangerous goods as articles or substances capable of posing a risk to health, safety, property or the environment. Lithium batteries are a common example, though they have become an indispensable part of our daily lives, powering electronic devices and life-saving medical devices such as pacemakers and defibrillators. Lithium batteries have been prohibited from transport as cargo on passenger aircraft since 1 April, 2016, but they continue to be transported in large quantities on all-cargo aircraft.

This stream will provide students the opportunity to consider whether lithium batteries can be transported safely by air and, if so, how. Students will be provided with incident data, test data, and a more detailed description of the risks they pose. They will also receive a list of current mitigation measures and their limitations, including new measures being considered. Students will be contributing to the resolution of a problem that has been the subject of intense discussions among experts in the fields of dangerous goods, operations, airworthiness and safety management at ICAO and the aviation community for many years.

### Stream 3

## THE SOCIO-ECONOMIC BENEFITS OF AIR TRANSPORT

Over the course of the past year, aviation continued its return to strength, marking new heights in 2016, with the carriage of 3.8 billion passengers and 53 million tonnes of freight. Together with the rise of new markets for aviation, more people than ever are connected to global market opportunities.

Aviation is in the business of connecting people, overcoming oceans and borders, creating economic growth, and contributing to sustainable development. Aviation provides freedom to travel, enables access to foreign markets, and allows the exchange of cultural experiences. A strong and affordable global air transport network helps to improve quality of life, while spreading knowledge of different societies and cultures, to deliver better services and aid to the public. This enhances access to remote and least-developed areas, regardless of location.

Directly, aviation supported 10.2 million jobs in 2016, with an economic impact of USD725 billion. With over 1,000 scheduled airlines, 26,700 aircraft in service, 4,000 airports, and 170 air navigation centres across the world, aviation permeates all sectors of the global economy.

Additionally, the value of indirect, induced, and tourism-related benefits from the sector is far larger: The total economic impact of the industry is some 3.5 per cent of world GDP – USD2.7 trillion – with the creation of 67.3 million jobs.

This stream will provide students the opportunity to quantify the economic benefits of air transport and contribute to the work on the socio-economic benefits of air transport.

## Stream 4

### **CAPACITY BUILDING AND AVIATION SECURITY**

In an interconnected global aviation security system, a vulnerability anywhere is a threat to traveling passengers everywhere. Resolving such a security concern requires a tailored approach that is based on the needs and capabilities of a State, and identifying existing deficiencies in aviation security is only the first step to fully addressing the issue.

Steps must be taken to provide assistance and capacity development to States in need to address the root causes of the identified security deficiencies. Capacity development ranges from programme development, enhancing skillsets, to the delivery of targeted assistance needs to manage and prioritize in a way that addresses the deficiencies in a timely manner, using limited resources. When successful, the outcome of capacity development is strengthened aviation security through compliance with global standards, and the implementation of effective security measures.

This stream will provide students the opportunity to further explore the various levels of aviation security and the required capacities to ensure a secure aviation environment.