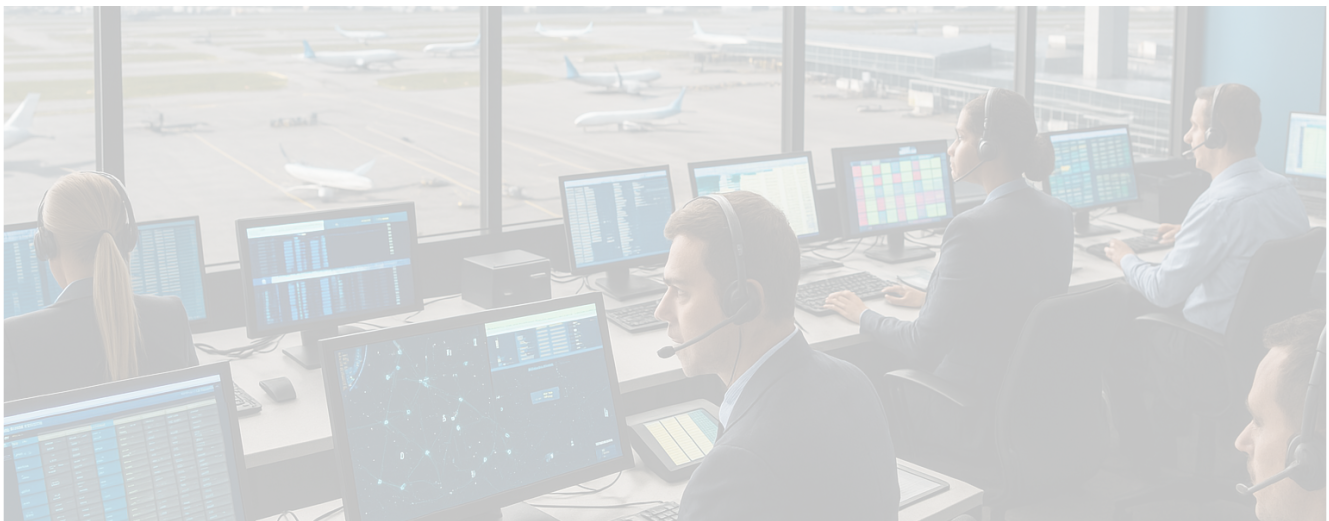




# Module 3 – Airport Operations, Safety Certification & Airfield Maintenance Cybersecurity



## Module 3

# Airport Operations, Safety Certification, and Airfield Maintenance Cybersecurity

This module transitions from airport development to the day-to-day functions of airport operations, safety, security, and maintenance along with their cybersecurity requirements. We will explore FAA Part 139 Airport Certification, including the Airport Operating Certificate (AOC) and Airport Certification Manual (ACM), and the role of self-inspection programs. A significant portion will cover airfield maintenance and safety standards for essential components like pavement, markings, signs, and lighting, as well as specialized airport safety programs such as Snow and Ice Control Plans (SICP), Aircraft Rescue and Fire Fighting (ARFF) requirements, and Wildlife Hazard Management Plans (WHMP).

The module addresses airport emergency management, including the Airport Emergency Plan (AEP) and the National Incident Management System (NIMS), alongside airport security functions governed by TSA regulations, including the Airport Security Program (ASP), definition of security areas, and access control systems. We will evaluate the cybersecurity measures necessary to protect operational data (e.g., inspection records, NOTAMs), secure maintenance and safety program systems, ensure the integrity of NAVAID data, and safeguard physical security systems like PACS and CCTV, as well as emergency communication networks and credentialing databases.

## Lecture Focus

Airport safety and Part 139 certification (AOC, ACM, self-inspections), airfield maintenance standards (pavement, markings, lighting, NAVAIDS), specialized airport safety programs (SICP, ARFF, WHMP), airport emergency management (AEP, NIMS/ICS, EOC/Comms), and airport security (ASP, security areas, access control/PACS, CCTV), along with the cybersecurity implications for each of these operational areas.

## Cybersecurity Focus

Protecting operational data (inspection records, NOTAMs), securing maintenance management systems (work orders, PMP data), ensuring integrity of NAVAID data feeds, securing airfield lighting controls (OT/SCADA), securing Physical Access Control Systems (PACS) and credentialing databases, protecting emergency communication networks and EOC/dispatch systems, and ensuring cybersecurity for physical security systems like IP CCTV.

## Course Alignment

- **Outcome 1:** Demonstrate an understanding of the cybersecurity measures necessary to protect stakeholder data and ensure secure communication in airport administration.
  - **Objective 1.3:** Evaluate the integrity and availability of airport historical management data to ensure accurate, secure, and uninterrupted access to stakeholders.
  - **Objective 1.5:** Design an access control system using role-based access to ensure that only authorized personnel can modify sensitive administrative and stakeholder data.
- **Outcome 2:** Explain how cybersecurity impacts the safety and integrity of flight operations within the U.S. airspace system, ensuring secure communication and data exchange.
  - **Objective 2.1:** Recall common cybersecurity risks associated with air traffic control (ATC) systems.
  - **Objective 2.2:** Explain the role of encryption in protecting communication between aircraft and ground control from unauthorized access (relevant to emergency communications).
  - **Objective 2.5:** Develop a cyber incident response protocol specific to potential attacks on flight operation systems.
- **Outcome 3:** Analyze the role of governance structures in implementing cybersecurity practices that comply with federal

regulations and protect airport management systems.

- **Objective 3.4:** Create strategies to secure governance and legal data related to airport sponsor agreements.

## CM Module Content

- **CM Module 3:** Airport Safety and Certification (Part 139, AOC, ACM, Self-Inspection)
- **CM Module 3:** Airfield Maintenance and Safety Standards (Pavement, Markings, Signs, Lighting, Safety Areas, NAVAIDS, Public Protection)
- **CM Module 3:** Airport Safety Programs (SICP, ARFF, WHMP, Construction Safety)
- **CM Module 3:** Airport Emergency Management and Communications (AEP, NIMS/ICS, IROPS, Communications Center)
- **CM Module 3:** Airport Security (History, ATSA, Regulations, ASP, Security Areas, Access Control/Credentialing, GA Security)

### Lesson Materials



#### Module 3 – Overview

Web Page



#### Module 3 – Reading

Web Page



## Module 3 - Presentation

PDF document



## Module 3 - Podcast

Audio



## Module 3 - Supplemental Websites and Videos

Web Page



## Graded Assignments



## Module 3 - Quiz

Quiz

