

# Aviation Challenge Mach III

## Lesson Overviews

### FY-2018

**Aerospace Physiology-** In this briefing, trainees are introduced to concepts of flight that affect the human body. They will discuss factors that affect both the vestibular and ocular senses as well as ways to deal with sensory issues.

**Aviation History and Technology-** This briefing can be broken up into several smaller discussions with trainees. It covers the history of flight as well as how flight has changed as technology has improved.

**UAS Intro-** This briefing will cover the definition, governance and use of 'drones' both in military and civilian uses.

**Water Survival Briefing-** In this briefing, trainees will be introduced to water survival tips and techniques. They will also be introduced to the different types of life preservers and the situations in which each kind would be appropriate.

**Land Survival Briefing-** The 'Intro to Survival Briefing' will be a quick way for cadets to understand the basics of survival skills.

**Cockpits and Instruments-** This briefing will cover the inside of the basic cockpit of a standard aircraft as well as some advanced features in modern military and civilian aircraft. After the briefing, trainees will work in group to design their own cockpit layout, while including the necessary instruments and remaining within budget.

**RotorWing Aircraft-** This briefing will introduce the trainees to helicopters. We will discuss their history, and the control systems, as well as the science behind how they work. The trainees will also design and build their own aero-prop.

**Synopsis of Flight-** This briefing is an investigation of flight, from the 4 basic forces to the principals behind jet engines. Trainees will be introduced to the basic laws of physics that help us understand how heavier than air flight is possible.

**Weather-** Trainees will discuss how different types of weather affects flight. After learning about the forecasts and weather reports that are used in aviation, trainees will decode a Terminal Area Forecast (TAF) to determine what types of weather are being forecasted.