



## **Introduction Information**

## Advanced Tactical Training Search and Rescue

The following is a course outline for all UAV requirements outlined by Transport Canada.

### **Air Law:**

One of the primary ways ensuring aviation safety is for operators to have a good grasp of regulations and procedures.

The manned aviation industry regulations are always being amended to apply to Unmanned Aerial Vehicles. These are the following topics covered in this section

- Definitions
- Introduction to CARs
- Aerodromes and Airports
- Airspace Structure
- Aircraft Operating Restrictions
- Operating and Flight Rules
- Operational and Emergency
- Flight Preparations, Flight Plans, Flight Itineraries
- Pre-Flight Requirements
- Operations in the Vicinity of an Aerodrome
- VFR Air Regulations
- Special Flight Operations
- Aircraft Requirements
- Aircraft Equipment Requirements
- Aircraft Maintenance Requirements
- Aircraft Technical Records
- Miscellaneous
- Transportation Safety Board
- Air Traffic Services
- Other Legislation

## Advanced Tactical Training Search and Rescue

### Navigation:

Knowledge of how to interpret aviation charts is a fundamental skill. This part of the course is interactive, helping to understand airspace.

- Definitions
- Maps and Charts
- Time and Longitude
- Pilot Navigation
- Triangle of Velocity
- Pre-Flight Preparation
- Radio Theory, GNSS and Other Radio and Radar Aids

### Meteorology:

Read weather like a pilot and accessing the information is imperative. Learn some essential tools available to you and the theory of weather related information, that goes along with it.

- Composition of the Atmosphere
- Atmospheric Pressure
- Altimetry and Meteorological Conditions
- Temperature
- Atmospheric Moisture
- Stability and Instability- Fog and Inversions
- Cloud Types
- Fog and Surface Based Layers
- Turbulence
- Wind
- Air masses
- Fronts
- Aircraft Icing
- Thunderstorms
- Meteorological Services Available to Pilots
- Aviation Weather Reports
- Aviation Forecasts

# Advanced Tactical Training Search and Rescue

## General Knowledge:

This encompasses several subtopics into one. We will cover everything from the wing design to batteries styles etc. including to how standard operating procedures make operations safer.

### *Theory of Flight*

- Principles of Flight
- Forces Acting on an Aeroplane
- Aerofoils
- Propellers
- Design of the Wing
- Rotor Design
- Load Factor
- Stability
- Aeroplane Flight Controls
- Helicopter Flight Controls
- Aircraft Components
- Helicopter Aerodynamics
- Multi Rotor Copter Dynamics
- Airships
- Recovery Systems

### *Flight Operations*

- General
- Aircraft Performance
- Performance Charts and Data
- Weight and Balance
- Aircraft Critical Surface Contamination
- External Loads
- Occupational health and Safety
- UAV VLOS Operations

### *Flight Instruments*

- Pitot Static System
- Airspeed Indicator
- Altimeter
- Compass
- Heading Indicator
- Attitude Indicator
- Instrument Flying
- Control Station and Simulation

Advanced Tactical Training  
Unmanned Aerial Vehicle Ground Course

# **Advanced Tactical Training Search and Rescue**

## *Engines, Airframes and Systems*

- Airframes
- Engines
- Electrical System
- Fuel Systems and Fuels
- Data Links
- Batteries
- Autopilots
- Payloads
- Electrical Motors
- Launch and Recovery Systems
- Maintenance and Record Keeping

## *Human Factors*

- Aviation Physiology
- The Pilot and the Operating Environment
- Aviation Psychology
- Equipment-Materials Relationship, Operating Procedures
- Interpersonal Relations

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## **Advanced Tactical Training Search and Rescue**

### **General information**

Courses are held for approximately 20 hours which could include some flight time as well at the discretion of the instructor.

The theory course is held as informative as a knowledge course to prepare you for any exam Transport Canada may issue directly.

Any practical side offered is at the discretion of the instructor and not mandatory to the course agenda.

All course fees are to be paid prior to the course and there is no refund in full or part in a period shorter than 7 days, prior to the start of the course, for any reason. Any person not completing the course for any reason is not permitted to request a refund of any kind.

### **Special Flight Operation Certificate Application:**

Transport Canada require every operator to submit an Application stating very specific information about their flight requirements.

This can be intimidating and very confusing.

We assist you with this application procedure and can work with you on your submissions and how to followup with additional information if required and a continuance of procedure and applications.

This is changing with Transport Canada, and we will keep up to date with their requirements.