

Ag Drone School

Lakedell Ag Society
November 17-18, 2025



Day One: Morning

Monday, November 17

- 9:00 a.m. **Welcome & Introductions**
- 9:30 a.m. **Introduction to RPAS**
Remotely Piloted Aircraft Systems: history of development, purposes and applications; airframes and propulsion systems, and the theory of flight.
- 11:00 a.m. **Certification Process & Intro to Air Law**
Introduction to the legislation around RPAS operations, the *Canadian Aviation Regulations*, and the process for acquiring a Pilot's Certificate. Participants will examine airspace restrictions for their farm to determine which level of certification is required.

Day One: Afternoon

lunch provided

- 12:30 p.m. **On-Farm Uses of Drones**
Once students are familiar with the basic flight technology and its capabilities, we will go through many different uses for drones on the farm. This presentation will start with a brief discussion of the different types of sensors that have applicability to agriculture (RGB, NIR, Thermal, LiDAR) and we will then give many examples of how those are being actively used on farms today.
- 2:00 p.m. **Human Factors, Site Survey & Pre-Flight Planning**
Continuation of RPAS ground school, including review of the human factors in aviation. This session will also include discussion of many factors to be considered for safe flight operations, including meteorology, navigation, radiotelephony and site survey.
- 2:30 p.m. **Manual Flight Manoeuvres**
Participants will learn to fly through a series of practice flights, under the direct supervision of an experienced operator and instructor. Typically, this will be conducted indoors, space permitting. We will use DJI Mavic Mini aircraft, beginning with first takeoff and ending with a manual "point of interest" flight. You will be comfortable flying in tight indoor space before the day is out.
- 3:45 p.m. **Best Practices: Emergency Management, Maintenance, Storage & Travel**
Prudent operation of an unmanned aircraft requires preparation for various emergency scenarios. We will discuss various real-life scenarios and how to prepare for them. Practical advice to ensure that your aircraft and its ground support elements are always in good repair. Considerable focus will be put on battery management.
- 4:30 p.m. **School concludes for the day**

Hands-on learning



9:00 a.m. **Remote Sensing Workflows**

We will present the theory behind the generation of maps and 3D models from semi-autonomous RPAS flights. Discussion of the most common vegetative indexes in multispectral imaging. Several examples of complete workflows will be presented, from flight planning to map processing using Pix4Dfields and DJI Terra software.

10:00 a.m. **Livestock & other Farm RPAS Uses**

There are many other uses for drones on the farm, both simple and complex, and those will be discussed during this session. We will also go through the applications for drones with focus on cattle – examples of thermal and zoomable cameras that can be used for finding, monitoring, or counting livestock.

10:30 a.m. **Introduction to Spraying by Drone**

We will discuss the practical realities of drone use for product application. Practical and regulatory aspects of spraying herbicides or liquid fertilizers, as well as broadcast seeding of cover crops.

11:15 a.m. **Achieving Accuracy**

Whether mapping or spraying, getting accurate results from a drone is crucial to success. We will discuss spectral calibration during mapping missions, geolocation accuracy through RTK/PPK, and calibration of spray quality/spray width.

Day Two: Afternoon “Fly Day”

*lunch provided*1:00 p.m. **Test Preparation**

Review of ground school concepts and the relevant sections of the *Canadian Aviation Regulations*. We recommend reviewing the annotated regulations and Aviation Information Manual materials included in your printed materials for reference before and during the test.

1:30 p.m. **Online Transport Canada test (optional, \$10 fee payable to Transport Canada)**

We encourage you to bring a laptop or tablet to take Transport Canada’s Small Basic Operations test at the end of class. We are not able to assist you during the test, but it may be best to just take the test while the material is fresh. And it is open book, so you can use your reference materials.

3:00 p.m. **Fly Day:** Participants will operate numerous RPAS models outdoors, from the Mavic 3 Enterprise to Matrice-series drones, including thermal and multispectral sensors. Scenarios will ensure participants gain experience with site survey and emergency procedures, while taking turns as pilots and visual observers. There will be a selection of missions to complete in small groups, with all participants getting “stick time”. You will **learn to do by doing**.
Dependent on weather allowing flight within manufacturer’s specs.

4:30 p.m. **School concludes – thank you for attending!**