STRETCHLEARN · WORKBOOK

Drone Flying & Aerial Photography — Workbook

This workbook is your hands-on companion to the Drone Flying & Aerial Photography course. Each section mirrors a course module and gives you structured exercises, fillable worksheets, and practical checklists to apply what you learn during and after real flights. Complete these before, during, and after your practice sessions to build safe habits and deliberate piloting skills.

Controller Setup, Hardware, and Preflight

Build your personal preflight checklist, document your hardware configuration, and develop the inspection habit that prevents most drone incidents.

Exercise: Prop and Motor Inspection Drill

Before your next flight, inspect each of the four propellers and motors using the criteria from Module 1. Perform the physical checks slowly and methodically, then answer the reflection prompts below.

• What condition were each of the four props in — describe any nicks, warping, or discolouration you found?

• Did all four props seat with a clear click-lock confirmation? If not, what did you do?

• How long did the inspection take, and what could you do to make it faster without skipping steps?

• After the 30-second Hover Test at 1.5 m, did the drone drift? If so, in which direction and by how much?

Worksheet: Drone Hardware Configuration Record

Fill out this record for your drone. Update it whenever firmware is upgraded, props are replaced, or hardware is serviced. Keep a copy in your flight kit.

Drone make and model

Serial number

Firmware version (drone)

Firmware version (controller)

Remote ID module serial (if separate)

Prop type and last replacement date

Battery 1 serial and cycle count

Battery 2 serial and cycle count

Battery 3 serial and cycle count

Gimbal model and software version

SD card brand, capacity, and speed class

Controller mode (Mode 1 / Mode 2)

RTH altitude currently set (metres)

Obstacle avoidance mode currently set

Last compass calibration date and location

Last IMU calibration date

Notes on any known issues or repairs

Checklist: Personal 15-Point Preflight Checklist

[ ] Check UAV Forecast or Windy — wind below 20 mph, no precipitation forecast
[ ] Open B4UFLY and confirm launch site is in uncontrolled or authorised airspace
[ ] Drone battery charged above 80%
[ ] Controller battery above 50%
[ ] SD card inserted, formatted, and sufficient free space confirmed
[ ] All four props inspected and click-locked
[ ] Gimbal guard removed and stowed
[ ] Lens cleaned with microfibre cloth
[ ] App connected and live video feed confirmed on screen
[ ] Home Point set and confirmed on map
[ ] RTH altitude set above tallest nearby obstacle
[ ] Obstacle avoidance (APAS) enabled
[ ] RC signal strength 4+ bars at launch site
[ ] Bystanders at least 30 m from takeoff area
[ ] Landing pad deployed at launch point

Airspace, Regulations, and Exam Preparation

Map the airspace around your home base, practice LAANC authorisation requests, and score yourself on Part 107 or TC RPAS exam topic areas.

Exercise: Local Airspace Mapping Exercise

Open B4UFLY or AirMap and pick your three most likely flying locations. For each one, answer the questions below before your next flight to that location.

• What airspace class applies at ground level for each of your three planned locations? List them with their LAANC ceiling altitude (or note if no ceiling applies).

• Are there any active TFRs within 20 NM of any location? Check tfr.faa.gov and describe what you found.

• For any location requiring LAANC, walk through a test request in Aloft or AirMap — what authorisation altitude were you granted, and how long did approval take?

• Identify one location within 10 km of your home that you assumed was legal to fly but turns out to require an authorisation or is prohibited. What restriction applies?

Worksheet: Part 107 / TC RPAS Exam Topic Self-Assessment

Rate your current knowledge for each exam topic on a scale of 1 (no knowledge) to 5 (confident). After completing the module, re-rate each topic and identify the two areas still needing the most study.

Airspace classification (Classes A-G or CAS/UAS in Canada) — rating before / after

Reading VFR sectional charts — rating before / after

TFRs and NOTAMs — rating before / after

METAR and TAF weather interpretation — rating before / after

Loading, performance, and weight and balance — rating before / after

Emergency procedures — rating before / after

Radio communications and phraseology — rating before / after

Crew resource management and decision-making — rating before / after

Maintenance and preflight inspection requirements — rating before / after

Part 107 operating limitations (altitude, VLOS, night, etc.) — rating before / after

Two lowest-rated topics after study (write the topic names)

Planned study resources for each low-rated topic

Target exam date

Checklist: Pre-Flight Airspace Clearance Checklist

[ ] Check B4UFLY at the planned launch GPS coordinates — confirm Green/Yellow/Red status
[ ] Verify tfr.faa.gov for active TFRs within 20 NM (check the day of flight, not the day before)
[ ] Check 1800wxbrief.com for relevant NOTAMs at the launch airport identifier
[ ] If in Class B/C/D or Class E surface: obtain LAANC authorisation via Aloft or AirMap and save the approval email
[ ] Confirm no National Park, wildlife refuge, or stadium restrictions apply to the physical launch site
[ ] Check for local city or municipality ordinances that restrict drone launches in the area
[ ] Note the exact LAANC ceiling altitude granted and set the altitude limit in the app accordingly
[ ] Re-check TFRs within 1 hour of launch time — TFRs can activate with short notice

Aerial Camera Settings and Cinematic Technique

Build a camera settings reference card for your specific drone model, practise cinematic moves on a target subject, and develop a shot list workflow for planned aerial shoots.

Exercise: ND Filter Selection Practice

On your next three flights in different lighting conditions (sunny, overcast, golden hour), apply the 180-degree shutter rule and select the appropriate ND filter before taking off. Answer the prompts after each flight.

• What were the lighting conditions, frame rate, and required shutter speed for each of your three test flights? Which ND filter did you select and why?

• Review 30 seconds of footage from each flight in slow motion — does the motion blur look natural, too choppy (shutter too fast), or too smeared (shutter too slow)?

• What ISO did you end up using in each lighting condition, and was any visible noise present? At what ISO did you first notice it?

• Describe the difference in colour and contrast between footage shot in D-Log M and footage shot in Normal mode on the same scene.

Worksheet: Aerial Shot List and Location Scouting Form

Complete this form before each planned aerial shoot to ensure you arrive prepared with a clear creative and technical plan. Fill in one row per planned shot.

Shoot date and location name

GPS coordinates of planned launch point

Airspace class and LAANC authorisation reference (if applicable)

Planned shoot time and expected light quality (golden hour, overcast, midday)

Shot 1: move type, subject, starting position, ending position, estimated duration

Shot 1: frame rate, ND filter, ISO, white balance Kelvin

Shot 2: move type, subject, starting position, ending position, estimated duration

Shot 2: frame rate, ND filter, ISO, white balance Kelvin

Shot 3: move type, subject, starting position, ending position, estimated duration

Shot 3: frame rate, ND filter, ISO, white balance Kelvin

Backup shots if weather changes

Total planned flight time (minutes) vs. available battery capacity

Post-processing plan: LUT to apply, delivery format, client deadline

Checklist: Post-Shoot Footage Quality Review Checklist

[ ] Review first clip at 100% playback speed — check for horizon tilt (must be within 0.5 degrees)
[ ] Scrub through every clip in slow motion to confirm motion blur is natural at the 180-degree shutter setting
[ ] Check colour consistency across clips — white balance should be identical if set to a manual Kelvin value
[ ] Confirm no visible ISO noise on dark areas of the frame in any clip
[ ] Verify audio track is clean (wind rumble should be absent or minimal — use the ND filter bag as a windshield over the gimbal if needed)
[ ] Back up all footage to a hard drive before removing the SD card from the drone
[ ] Label the backup folder with date, location, and drone model
[ ] Log total flight time and note which shots required reshoots and why
[ ] Note any ND filter selections that were incorrect and what you will change next time

Battery Management, Safe Operations, and Emergency Procedures

Track your battery fleet health, document emergency procedure rehearsals, and build a post-incident reporting habit.

Exercise: Battery Health Audit

Connect each of your batteries to the DJI Fly app or a balance charger with a display and record the data below. Perform this audit at the start of each new flying season and every 25 cycles thereafter.

• For each battery: what is the current cycle count, reported capacity (mAh), and capacity as a percentage of original rated capacity?

• Check individual cell voltages on each pack after a full charge. Are all cells within 0.05 V of each other? List any that are out of tolerance.

• Is any battery pack physically swollen or showing casing damage? Describe what you observe and what you will do with it.

• Based on your audit, which (if any) batteries should be retired, and what is your plan for safe disposal?

Worksheet: Flight Log and Battery Tracking Record

Complete one row per flight in the table below. Consistent logging is required for FAA waiver applications and is evidence of professionalism for commercial clients.

Flight date

Location name and GPS coordinates

Airspace class

LAANC authorisation reference (if applicable)

Battery serial number used

Battery starting voltage (V) and state of charge (%)

Battery ending voltage (V) and state of charge (%)

Flight duration (minutes)

Cumulative battery cycle count after this flight

Weather conditions (wind speed/direction, temperature, cloud cover)

Any app warnings or alerts observed during flight

Any incidents, near-misses, or unplanned events

Landing quality (smooth / rough / emergency)

Post-flight battery temperature before charging (degrees C)

Notes

Checklist: Emergency Procedure Rehearsal Checklist

[ ] Practice activating RTH manually from the RC controller — confirm the button location without looking at the controller
[ ] Practice overriding RTH by moving the left stick — time yourself to under 2 seconds from decision to override
[ ] Set RTH altitude on a new flight profile and verify it reflects the tallest obstacle in the planned flight area
[ ] Rehearse the low-battery response: at the 25% warning, mentally plan your nearest suitable landing zone and begin returning
[ ] Identify the emergency cut-throttle combination on your specific controller model and memorise it
[ ] Know the location of the nearest FAA-reportable incident form (FAA DroneZone online portal) for any crash causing property damage or injury
[ ] Carry a printed copy of your LAANC authorisation (or screenshot) on every commercial flight
[ ] Know the Transport Canada or FAA hotline number to report a fly-away or airspace conflict if one occurs

[ ] Brief any observers or assistants on the emergency signal (one raised arm) that means step back immediately

Your Action Plan

1. Complete the Drone Hardware Configuration Record worksheet and store it with your drone kit before your next flight
2. Personalise and laminate the 15-point preflight checklist and attach it to your drone bag
3. Map the airspace around your top three flying locations using B4UFLY, note LAANC ceilings, and save the map screenshots
4. Take the TC or FAA practice exam online, score yourself, and fill in the Exam Topic Self-Assessment worksheet to identify your two weakest domains
5. Conduct three test flights in different lighting conditions to build your personal ND filter selection reference and complete the ND Filter Selection prompts
6. Perform a full battery health audit for every pack you own and retire or flag any pack with cell deviation above 0.05 V or capacity below 80%
7. Build a shot list using the Aerial Shot List worksheet before your first creative/client shoot
8. Review and log your first five flights in the Flight Log worksheet to establish the habit
9. Schedule and perform an Emergency Procedure Rehearsal — practice RTH override and low-battery response in a safe open area
10. Book and pass the Part 107 or TC Basic RPAS written exam within 60 days of completing this course