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DJI Mini 3 Pro

DJI Mini 3 Pro - The Practice Manual

Model: Mini 3 Pro

Brand: DJI

1. Introduction to the DJI Mini 3 Pro

The DJI Mini 3 Pro is a compact, high-performance drone designed for ease of use and exceptional aerial photography and videography. This practice manual serves as a comprehensive guide to help users understand and master all aspects of the DJI Mini 3 Pro, from initial setup to advanced flight techniques and maintenance. It aims to provide practical knowledge for safe and effective drone operation.

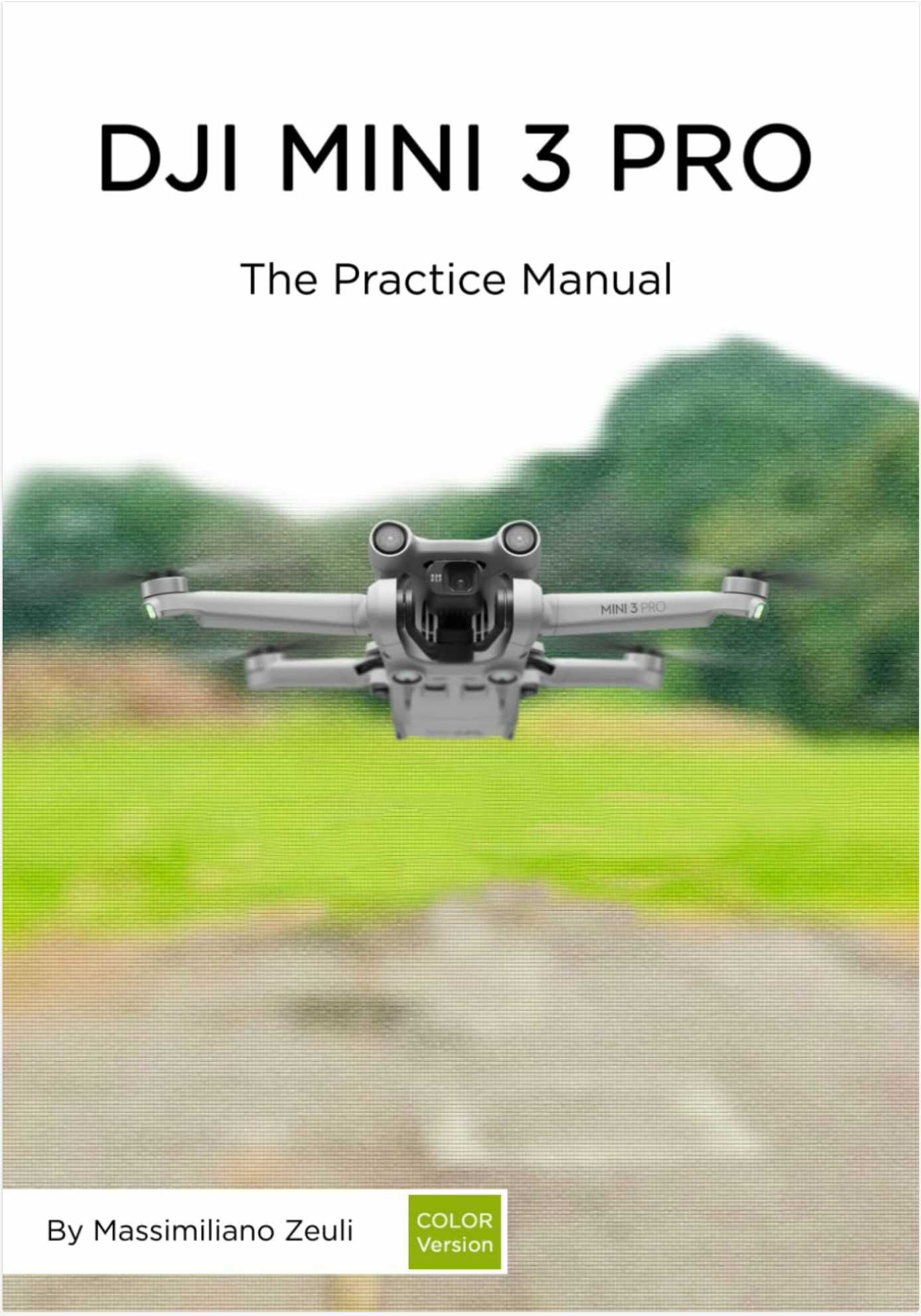


Figure 1.1: Front cover of the DJI Mini 3 Pro Practice Manual.

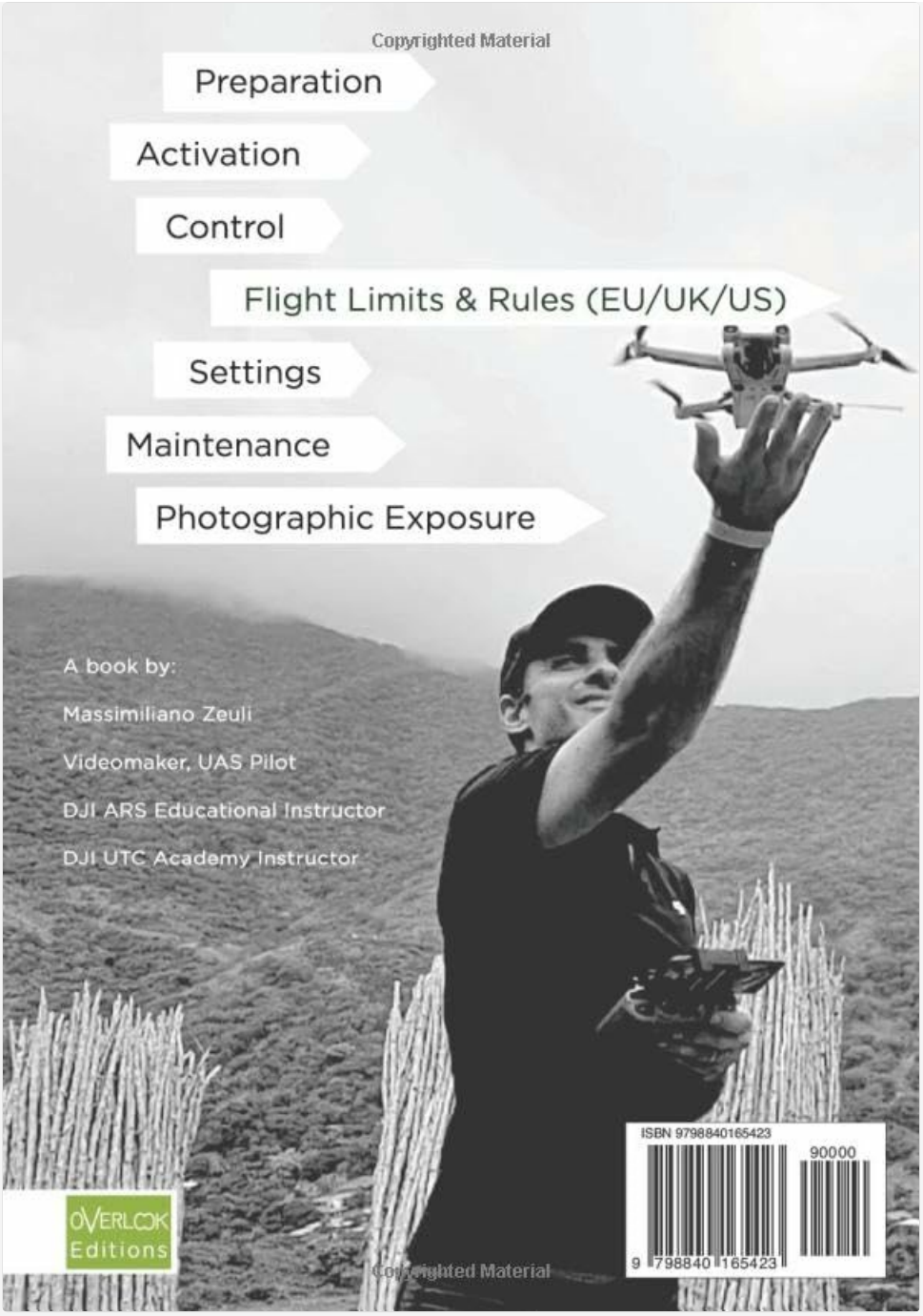


Figure 1.2: Back cover of the DJI Mini 3 Pro Practice Manual, highlighting key topics.

2. Setup and Activation

2.1 Drone Preparation

Before your first flight, ensure the Intelligent Flight Battery is fully charged and securely inserted into the aircraft. Unfold the front and rear arms of the drone. Remove the gimbal protector. Check that the propellers are correctly attached and free from damage. For optimal performance, ensure your mobile device is charged and has the DJI Fly app installed.

2.2 Product Activation

To activate your DJI Mini 3 Pro, connect the aircraft to the DJI Fly app via your mobile device. Follow the on-screen prompts to complete the activation process. This typically involves logging into your DJI account and agreeing to the terms of service. Activation is a one-time process required before the first flight.

3. Aircraft Control and Flight Modes

3.1 The Remote Controller (RC-N1 and DJI-RC)

The DJI Mini 3 Pro can be controlled using either the standard RC-N1 remote controller, which requires a connected smartphone, or the DJI RC, which features a built-in screen. Both controllers offer precise control over the drone's movement, camera, and various functions. Familiarize yourself with the joysticks, buttons, and switches on your chosen controller.

3.2 Flight Modes

The DJI Mini 3 Pro offers several flight modes to suit different flying styles and scenarios:

- **Normal Mode (N):** Provides a balanced flight experience, suitable for most users.
- **Sport Mode (S):** Increases the drone's speed and responsiveness, ideal for dynamic shots.
- **Cine Mode (C):** Slows down the drone's movements for smoother, more cinematic footage.

3.3 Controlling the Aircraft

Learn the basic controls for takeoff, landing, ascending, descending, forward/backward movement, and rotation. Practice in an open, safe environment until you are comfortable with all maneuvers. Always maintain visual line of sight with your drone.

3.4 Signal Transmission

The DJI Mini 3 Pro utilizes DJI's O3+ video transmission system, providing a stable and high-quality live feed from the drone to your remote controller. Ensure there are no significant obstructions between the drone and the controller to maintain a strong signal.

4. Advanced Safety Functions

4.1 Return To Home (RTH)

The RTH function allows the drone to automatically return to its recorded home point. This can be triggered manually, or automatically in cases of low battery or signal loss. Ensure your home point is accurately recorded before each flight.

4.2 Vision System

The DJI Mini 3 Pro is equipped with forward, backward, and downward vision sensors that assist with precise hovering and obstacle detection. These sensors are crucial for features like APAS 4.0 and contribute significantly to flight safety.

5. DJI Fly App

5.1 Control App Overview

The DJI Fly app is the primary interface for controlling your drone, viewing the live camera feed, and accessing intelligent flight modes. It provides real-time flight data, battery status, and GPS information.

5.2 Flight Interface

The app's flight interface displays critical information such as altitude, distance, speed, and signal strength. It also provides access to camera settings, flight mode selection, and quick access to intelligent features.

5.3 App Settings

Within the DJI Fly app, you can customize various settings including control stick modes, unit systems, maximum flight altitude, distance limits, and RTH altitude. Regularly review and adjust these settings to match your flying environment and preferences.

6. Camera and Gimbal Operations

6.1 Camera Overview

The DJI Mini 3 Pro features a high-quality camera capable of capturing stunning 4K HDR video and 48MP photos. Its large sensor and f/1.7 aperture excel in various lighting conditions.

6.2 Remote Controller Camera Functions

The remote controller provides dedicated buttons for taking photos, starting/stopping video recording, and adjusting gimbal tilt. These controls allow for quick adjustments during flight.

6.3 Gimbal Control

The 3-axis mechanical gimbal ensures stable footage by compensating for drone movements. You can control the gimbal's tilt angle via the remote controller or the DJI Fly app to frame your shots precisely.

6.4 Camera Settings

The DJI Fly app offers extensive camera settings, including resolution, frame rate, white balance, ISO, shutter speed, and color profiles. Adjust these settings to achieve your desired photographic and videographic results.

6.5 Exposure

Understanding exposure is key to professional-looking footage. Learn to balance ISO, shutter speed, and aperture (fixed on Mini 3 Pro) to achieve correct brightness. Use the histogram and overexposure warning in the app to assist with exposure control.

6.6 Camera Control

Beyond basic settings, explore advanced camera controls like AEB (Auto Exposure Bracketing), Burst Shooting, and Timed Shot for creative photography. For video, experiment with D-Cinelike color profile for post-production flexibility.

7. Advanced Aircraft Control

7.1 APAS 4.0 – Obstacle Avoidance

APAS (Advanced Pilot Assistance Systems) 4.0 uses the drone's vision sensors to detect obstacles in real-time and automatically plan a safe flight path around them, enhancing flight safety, especially in complex environments.

7.2 QuickShots

QuickShots are automated flight paths that capture cinematic video clips with a single tap. Options include Dronie, Helix, Rocket, Circle, Boomerang, and Asteroid, each creating a unique dynamic shot.

7.3 MasterShots

MasterShots combine multiple QuickShot maneuvers with music and effects to create a short, professional-looking video automatically. The drone executes a series of complex flight paths while keeping the subject in frame.

7.4 Hyperlapse

Hyperlapse allows you to create stunning time-lapse videos with dynamic camera movement. Choose from Free, Circle, Course Lock, and Waypoint modes to capture unique perspectives over time.

7.5 Pano

The Pano feature enables the drone to automatically capture multiple photos and stitch them together to create wide-

angle, 180°, Sphere, or Vertical panoramas.

7.6 FocusTrack

FocusTrack includes ActiveTrack 4.0, Spotlight 2.0, and Point of Interest 3.0, allowing the drone to automatically follow a subject, keep it in the frame, or circle around it, providing intelligent tracking capabilities.

7.7 DJI RC Features

The DJI RC remote controller, with its integrated screen, offers a streamlined flying experience without the need for a separate mobile device. It provides enhanced brightness and dedicated controls for a more intuitive operation.

8. Video Editing (via App)

8.1 Templates

The DJI Fly app includes various editing templates that allow users to quickly create cinematic videos from their captured footage. Simply select a template, and the app will automatically apply effects, music, and transitions.

8.2 PRO Mode Editing

For more advanced users, the app offers a PRO mode for manual video editing. This includes options for trimming, adjusting playback speed, adding filters, and fine-tuning audio, providing greater creative control over your final video.

9. Flight Limits and Regulations (EU/UK/US)

9.1 Flight Limits

The DJI Mini 3 Pro has built-in flight limits, including maximum altitude and distance, which can be customized within the DJI Fly app. Always adhere to these limits for safe operation.

9.2 EU/UK/US Rules

It is crucial to understand and comply with local aviation regulations. In the EU, UK, and US, this includes rules regarding drone registration, maximum flight altitude (e.g., 400 feet AGL in the US), flying near airports, privacy concerns, and maintaining visual line of sight. Always check the latest regulations from your local aviation authority (e.g., FAA in the US, CAA in the UK, EASA in the EU) before flying.

10. Maintenance

10.1 Firmware Update

Regularly update the firmware for your drone, remote controller, and Intelligent Flight Batteries via the DJI Fly app. Firmware updates often include performance improvements, new features, and bug fixes.

10.2 Intelligent Flight Battery Care

Proper battery care extends their lifespan. Store batteries at approximately 50-60% charge, avoid over-discharging or over-charging, and do not expose them to extreme temperatures. Allow batteries to cool before recharging.

10.3 Calibration (Compass and IMU) and Status LEDs

Periodically calibrate the compass and IMU (Inertial Measurement Unit) as prompted by the app or if you notice unusual flight behavior. Understand the meaning of the drone's status LEDs, which indicate flight status, warnings, and errors.

10.4 Attaching and Detaching the Propellers

Ensure propellers are securely attached before flight and detached carefully for storage or replacement. Use the correct propellers for your Mini 3 Pro model and inspect them for any cracks or damage before each flight.

10.5 DJI Care Refresh

DJI Care Refresh is an optional service plan that provides replacement units or repair services for accidental damage. Consider purchasing this plan for added peace of mind.

11. Technical Specifications

Specification	Detail
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