Remotely Piloted Aircraft System (RPAS) Checklists for DJI RPAs/Drones

Flight Planning

- Do a remote Site Survey/Obstacle Check using satellite views in **Google Maps/Earth**
- Flight Route/Area Reviewed & Planned using a combination of **RWY Check**, **OzRunway, OpenSky** and **AirMap** apps to check for No Fly Zones and any Restricted Areas
- If required; prepare any Job Safety Assessment (JSA), Flight Authorisation Form, Third Party Consent Forms, CASA Flight Authorisations, and approvals from any other authority
- Check Solar Activity for the proposed flight day(s)
- Check NAIPS Internet Service weather, wind forecasts & NOTAMS for proposed flight area

Before Departing for Launch Site

- Ensure SD Cards are formatted and have sufficient free space
- Check the *Maintenance* page on **Airdata UAV** to see if any hardware requires a service
- Ensure all RPA & Controllers, mobile devices, and any other batteries are fully charged
- Pack spare batteries for Air Band Scanner
- Check for any RPAS Firmware & App Software Updates
- Check Weather Temperature is within the DJI's -10°c to 40°c limits, Wind Forecast ≤21 knots, and Solar Activity OK
- Pack a First Aid Kit

Launch Site Survey & Launch Preparation

- Monitor applicable local CTAF or Air Traffic frequencies (at least 15 mins before 1st launch)
- If required; file a flight plan
- If required; place Warning signage at 30m around launch area
- Double check Solar Activity, current Weather and Wind forecasts, and review JSA form
- Ensure Landing Pad is away from any metal material that could interfere with RPA compass
- Ensure launch site is away from any High Voltage areas & overhead cables
- Prepare RPAS Controller(s) and associated DJI GO 4 and/or Fly apps
  If using a mobile device with a screen-less RPAS Controller:
  - Maximize the device's screen brightness and attach device to the RPAS Controller
  - Ensure mobile device Location/GPS is ON and in *Flight Mode*
- Turn ON the RPAS Controller(s) & launch the Controller's app
- Double check that the RPAS Controller(s) have sufficient battery charge
- Unfold and lock RPA arms, and check RPA for any visible damage or faults
- Remove the Lens Cover/Gimbal Clamp and attach appropriate UV/ND/PL filter
- Ensure the Camera Lens & any UV/ND/PL filter, and Vision System sensors are clean
- Ensure the RPA propellers are attached, secure, extended, rotating freely, and free from damage (if necessary, replace with spares)
- Ensure RPA Battery is *fully* charged & double check the battery is securely seated in RPA
- Run a Pre-Operational Briefing with the team, and nominate a *Spotter/Observer*

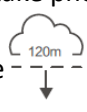
RPAS Pre-Flight Checks

- Place RPA on launch pad and turn the RPA ON
- Ensure the Camera & Gimbal are functioning normally
- Ensure the Controller's App successfully connects to RPA and enters the Camera View
- Review Status information and if required Calibrate the RPA's Compass (see page 4)
- Use Controller's App to double check an SD card is inserted and has sufficient capacity
- Ensure the RPAS Controller's Flight Mode switch is set to ***P-Mode***  or **Normal**
- Open App Settings and set the ***Home Point*** to *Static* or *Controller Location/Dynamic*
- Evaluate and set **RTH Height** (>30m and higher than highest surrounding objects)
- Ensure **RC Signal Lost** is set to "***Return to Home***", or carefully evaluate other settings
- Check satellite strength and allow time for the GPS to lock onto a minimum of 10 satellites for RTH to work effectively, or set Flight Mode switch to ATTI mode if less
- Align the Controller's antennas 90° to the RPA and check the RPA's signal strength
- Select either still or video camera (as required)
- Select appropriate camera mode (Auto, Manual, Aperture, or shutter priority) and settings (and):
    - Select appropriate ND filter and ***White Balance*** setting
    - For best video results, select an appropriate shutter speed (2x Frame Rate)

Take-Off

- Check and monitor Flight Radar App and Scanner/Transceiver for other flights in the area
- Check for safe operating (Max) Wind Speeds at launch site (≤21 knots or ≤10.7 m/s)
- Double check for obstacles (people, trees, power lines, structures, animals, etc.)
- Tap on the RPAS Controller
- Ensure conditions are safe for take-off
- Warn all team members and any other spectators of impending launch
- Slide the slider on the RPAS Controller to confirm (or manually) take-off
- Hover at 3m for 15 seconds to ensure Home Point gets registered (RPA Blinks Green quickly)
- Double check the RTH location on the map in the Controller's app
- Check that flight controls are responsive in all axis
- Climb to a height that avoids surrounding obstacles and review/reset RTH Height
- Fly the mission

Visual Line of Sight (VLOS) Flight

- Have team members monitor for any incursions (aircraft, people, cars, etc.) into flight area
- When required, press the ***C1*** button to focus the camera
- Tap the ***Record*** button to start recording or take photographs as required
- Maintain Visual Line of Sight with the RPA
- Fly below **120m** (400') AGL in controlled airspace 

- **DO NOT** fly within **5.5 Km** of a controlled airfield 
- **DO NOT** fly above or closer than **30m** to people, vehicles, boats, buildings & structures

Landing the RPA

- Ensure landing area is clear and conditions are safe to land
- Warn all team members and any spectators of impending landing
- When safe to do so; either fly the RPA to the "Home" or secondary landing Point and land, or tap (Smart RTH)
- If video is still in recording mode, tap the ***Record*** button to stop the recording

Post-Flight(s)

- Power OFF RPA to avoid accidental propeller spin incidents
- Remove battery from RPA and allow it to cool down
- If required, place battery in a Li-Po safe bag
- Attach Lens Cover/Gimbal Clamp
- Check airframe, propellers and equipment for any damage – record any issues
- Close the Controller's App and power OFF RPAS Controller(s)
- Pack up all equipment and collect any Warning sign-age (if used)
- Use **HD Sync** to upload the flight log data to the **Airdata UAV** cloud service
- At earliest possible opportunity update the **Airdata UAV** flights logs with any additional information, and process any Defect Reports or other documentation associated with the flight
- Transfer any new videos/photos off the SD Card and archive

Emergency Situations or Landings during the Mission

- Press the Pause button on the RPAS Controller and quickly evaluate next actions
- Manually land, or return to the Home Point, or initiate Smart RTH when safe to so

In the Event of an Accident

- Land and power off the RPA immediately
- Remove, inspect and position the battery in a safe place – observe battery for nefarious behaviour - in all cases place battery in Li-Po safe bag when transporting - if battery becomes unstable place in a bucket of salty water – ***never*** recharge or use a damaged battery
- Check for any injured people and provide appropriate assistance – call ambulance and/or police if necessary
- If accident is serious (person or property damage) – call the Australian Transport Safety Bureau on 1800 011 034 immediately and file a written IRM report within 72 hours
- Make a note of the time, place and type of incident and the contact details of all those involved including any witnesses
- Do not make any statements without the insurer's permission
- Check the RPA for damage - Do not abandon drone or equipment and take all reasonable precautions to protect it after the incident
- Notify insurer as soon as possible after the event and allow the insurer to inspect the damaged property prior to any repair or disposal

Calibrating the IMU of the Mavic 2 RPA

- Turn on both the Remote Controller followed by the Mavic 2 RPA
- Ensure all transmitting devices are away from the RPAS during any compass calibrations
- Connect to the **DJI GO 4** app
- Launch into the ***Go Fly*** flight screen on the DJI GO 4 app
- Go to the ***Flight Controller Settings*** and from there go into ***Advanced Settings***
- In the ***Advanced Settings*** screen go to ***Sensors***
- In the ***Sensors*** menu click the ***Calibrate IMU*** button
- Your screen will eventually show ***IMU Calibration Complete***
- Restart the RPA (switch off/on)

Calibrating the IMU of the Mini 4 Pro RPA

- In the **Fly** app, go to **…** (Settings), tap on ***Safety*** settings and then scroll to ***Sensors***

Wind Speed Table for Determining Safe Flying Limits for RPAs

Beaufort	Knots	m/s	km/h	mph	Label
0	1	0 - 0.2	1	1	Calm
1	1-3	0.3-1.5	1-5	1-3	Light Air
2	4-6	1.6-3.3	6-11	4-7	Light Breeze
3	7-10	3.4-5.4	12-19	8-12	Gentle Breeze
4	11-15	5.5-7.9	20-28	13-17	Moderate Breeze
5	16-21	8.0-10.7	29-38	18-24	Fresh Breeze
6	22-27	10.8-13.8	39-49	25-30	strong Breeze
7	28-33	13.9-17.1	50-61	31-38	Near Gale
8	34-40	17.2-20.7	62-74	39-46	Gale
9	41-47	20.8-24.4	75-88	47-54	Severe Gale
10	48-55	24.5-28.4	89-102	55-63	Strong storm
11	56-63	28.5-32.6	103-117	64-73	Violent Storm
12	64-71	>32.7	>118	>74	Hurricane

Chart to Convert AEST (+10) to/from UTC (Zulu Time)

	AEST																							
	1:00 am	2:00 am	3:00 am	4:00 am	5:00 am	6:00 am	7:00 am	8:00 am	9:00 am	10:00 am	11:00 am	Noon	1:00 pm	2:00 pm	3:00 pm	4:00 pm	5:00 pm	6:00 pm	7:00 pm	8:00 pm	9:00 pm	10:00 pm	11:00 pm	Midnight
Hours	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	15	16	17	18	19	20	21	22	23	24	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Yesterday's Date										UTC (Zulu Time)													