

UASA 514: PQ Card Endorsement for DJI Go Application Based Instrument Flight Maneuvers for Small Unmanned Aerial Systems (UAS) Operators

Flight Operations beyond visual line of sight (BVLOS) requires acute attention to detail, human factors training, and an ability to spatially navigate using 2D visual displays and data references that are quickly used to generate a 3D mental model of the airspace around the aircraft. Originally developed by UASA for the Department of Defense, and now being applied to public safety, the BVLOS flying course is an intense 2-day "Boot Camp" for teams (VO endorsement achieved in this course is required in the 2-pilot mandatory model) seeking to use LASR-Air Systems (air drones) in support of extended flight operations beyond the flight deck line of sight and/or night operations.

The intent of this course is to provide a basis for the development of Instrument Pilot training requirements in support of Tactics, Techniques, and Procedures (TTPs) for safe BVLOS. For UASA Members that have completed the UASA 512 course and have provided the mandatory prerequisite materials for enrollment, UASA 514 is satisfactory to meet the intent of the of safely dispatching pilots into either BVLOS or Night Waiver conditions. Pilots who complete this course will be endorsed to operate under "Centralized Management" and will have privileges to operate under FAA Waivers (LOS Night/BVLOS/1MCoC) that may be issued to your employer (the aircraft owner/operator).

To be enrolled, the pilot must complete all of the following: (1) mission planning factors ground school (online), human factors of FPV operations (online), and (3) the participant must submit a MOBAARS archive to the course instructor for all of the maneuvers in the UASA 512 Proficiency Check. Adequate practice time should be allotted prior to the course prior for each maneuver proficiency demonstration via MOBAARS (.txt files & iPad Video w/Audio as an alternate source).

2 Days of Full Time Flight School on DJI GO Application Operations and Maneuvers In Support of Flying Beyond Visual Line Of Sight (BVLOS) and Night Flying (LOS-Night)

DATE/TIME: DD MMM YYYY THRU DD MMM YYYY. THE COURSE STARTS AT 0830 AND ENDS AT 1630 EACH DAY.

REFERENCE MATERIALS: UASA 514 COURSE SLIDES; UASA INDOOR FLYING WITH DJI GO FLIGHT MANEUVERS GUIDE.

BRING YOUR LUNCH, WATER, ETC – WE WORK THROUGH EXTRA INSTRUCTION AND WILL BE ON THE LOT

LEAD INSTRUCTOR:

JIM BLANCHARD, SCD
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703 856 8400

LOCATION:

tbd
LASR@ Location Address
City State

COURSE OBJECTIVES:

1. Develop in the participants a deep understanding of the technology available to support Simultaneous Localization And Mapping (SLAM) on the DJI Phantom 4 Pro.
2. Prepare the participants for operating a UAS Beyond Visual Line Of Sight (BVLOS).
3. Demonstrate KSAs of human factors of Remote Pilot Operations under Instrument Conditions.
4. Develop a strong understanding in the participants of the requirements for a safe and effective BVLOS mission plan.
5. Develop a strong understanding in the participants of the requirements for establishing Minimum Obstacle Clearance Altitude (MOCA).
6. Provide participants with a series of cases for context-specific knowledge and skill application in DJI Go app based instrument flight operations assessment.
7. Ensure participants know the requirements for the operation of an air vehicle with regard to FARs applicable to FAR 107 operations.
8. Provide participants with a series of flight operations challenges (context-specific requirements) for the developing a meaningful aviation safety management system with regard to FARs.
9. Develop an ability for the participants to prepare for night mission.
10. Develop an ability for the participants to prepare for a sustained "Hot Seat" mission under BVLOS conditions with an emphasis on workload management.

Subordinate Learning Objectives (all to be performed with sUAS 500M away or more at night; VO via radio; Pilot in C2 Shelter):

11. Understand the concept of a remote split operation.
12. Understand the current state of reliability of DJI Go application flight deck information.
13. Demonstrate the ability to execute the takeoff checklist remotely.
14. Demonstrate the ability to perform a blind takeoff remotely.
15. Demonstrate the ability to perform an instrument scan while manually flying between 4 waypoints all of which are at least 500M apart at night.
16. Demonstrate the ability to identify cardinal directions from visual landmarks not visible from the LZ or flight deck during both day and night conditions.
17. Demonstrate the ability to perform a MOCA check remotely at night.
18. Demonstrate the ability to perform a circle POI remotely.
19. Demonstrate the ability to execute the landing checklist remotely to a dark LZ.
20. Demonstrate the ability to perform a blind landing remotely on an IR LZ.
21. Demonstrate the ability to re-orient and recover (disorientation recovery maneuver is not acceptable) the aircraft while in line of sight from 500M or more visually using orientation and navigation lights as the sole reference to the aircraft.
22. Conduct all operations with outstanding CRM and ADM, both as single pilot and crew.