User's Guide - V1.1



FEBRUARY 24, 2017
CENTER OF EXCELLENCE ON UAS SAFETY
University of California

This is a step by step guide to using the UC Drones web app

Please report any issues to erm@ucop.edu

The UC Drones Web App will continue to be updated and new features will be added regularly. Feature requests or suggestions can be emailed to UASSafety@ucmerced.edu

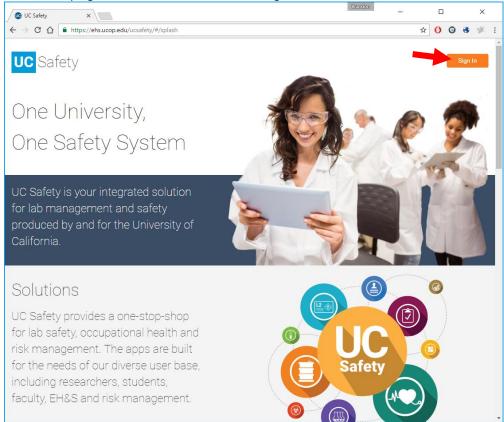
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Logging into the System

The UC Drones Web App is part of the UC Safety suite of apps for lab safety, occupational health and risk management. When logging into UC Drones for the first time, please visit by using the UC Safety web portal.

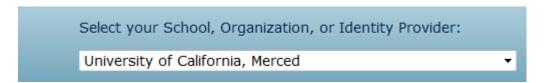
- 1. The UC Safety suite of apps can be found at https://ehs.ucop.edu/
 - a. The homepage will look similar to the image shown below:



b. Select the "Sign In" icon shown in the top right corner.

2. The first time visit will prompt a screen asking the user to select their school will pop up. Click on the drop-down menu and search for the appropriate UC Campus.





For example, University of California, Merced has been selected.

- A. Underneath Select School, Organization, Or Identity Provider, the user will be presented with three options.
 - 1. "Do not remember my selection" will always prompt this page to the user.
 - 2. "Remember my selection for this session only" will allow the user to bypass this screen for only this session.
 - 3. "Remember my selection permanently" option will skip this screen anytime the user accesses the UC Safety Drone page.

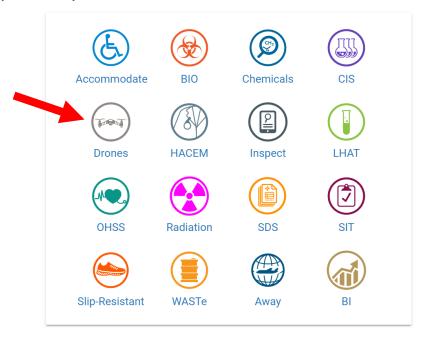
For example, I have selected "Remember my selection permanently"

- Do not remember my selection
 Remember my selection for this session only
 Remember my selection permanently
- B. The user may now hit the next button and continue onto the next page.
- C. The next page will now prompt the user to sign into their UC school account.

For example, the login page for a UC Merced user will look like:



3. Once on the UC Safety web portal, the user will be presented with the different apps offered by UC Safety.

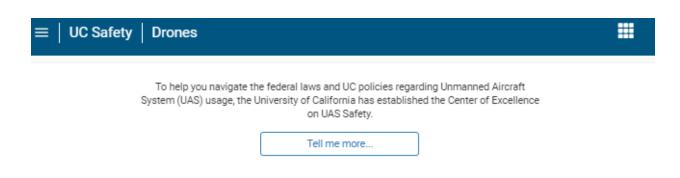


a. Select the "Drones" Icon to start the UC Drones web app.

The UC Drone Home Page

After logging into the UC Safety website for the first time, users can go directly to the UC Drone Home page by going to http://ehs.ucop.edu/drones

The UC Drone Safety Home Page allows users to manage their UAS Flights, aircraft and their pilot information. Additional information regarding UAS usage and policies can be found in the Tell me more... link.



Organize and plan your flight operations through a flight request to ensure compliance with federal regulations. Report a flight to comply to federal standards and provide information on UAS operations, including incidents caused by weather or human error.



Manage Flights

Manage Aircrafts

Register aircraft to streamline flight requests and to keep track of flight experience and aircraft management.

Pilot

Tell me more

The "Tell me more" link at the top will allow users to learn more about the federal laws and UC Policies associated with unmanned aircraft systems. Clicking" Tell me more..." will take the user to the UCOP Unmanned Aircraft Systems Safety website. This website has many resources to advise users on using drones for research, classrooms, clubs, obtaining licenses, and other useful pieces of information.

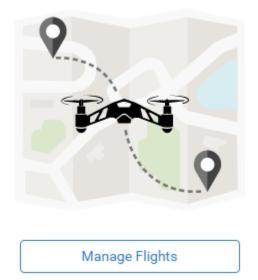
To help you navigate the federal laws and UC policies regarding Unmanned Aircraft System (UAS) usage, the University of California has established the Center of Excellence on UAS Safety.



Tell me more...

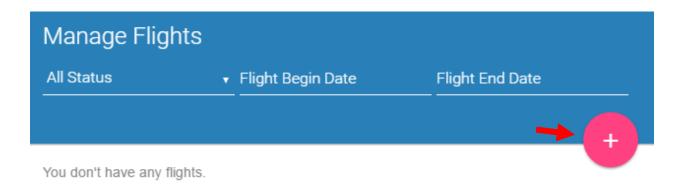
Managing your UAS Flights (Flight Request and Reports)

The Manage Flights/ Manage Aircraft section will allow the user to request a flight with the UC Center of Excellence on UAS Safety.



Create a new Flight (Flight Request)

By selecting "Manage Flights" the user will be presented with a list of flights. New users will see a similar screen as shown on the following page:



To add a flight to the management page, select the + icon located to the right of the page.

Existing flight requests or reports can be found on this page and are searchable by status and can be filtered by date (Flight Begin Date and Flight End Date).

Flight Request Form

The Flight Request Form is broken up into 4 categories:

- A. Aircraft The Aircraft to be used
- B. Pilot The person who will be serving as the Pilot in Command
- C. Contact The person responsible for ensuring the safety of the flight
- D. Flight Request.

Aircrafts and Pilots that have not been registered in the system can be added in the "Manage Aircrafts" and "Pilot" sections of the website. Please refer to the "Manage Aircrafts" and "Pilot" Sections of this guide to learn more.

The Aircraft, Pilot and Contact categories are all listed in one bar, as shown below.



A. Aircrafts

Aircrafts that are already registered into the system will be searchable in the aircraft section. **The user must enter the aircraft's FAA registration number**. If the registration number is entered incorrectly, the system will inform the user that the number is not registered.



B. Pilot

Pilots that have also been registered into the system will be searchable in the Pilot section. The user must enter the pilot's last name first.

C. Point of Contact

Under the Contact Section, the user is set as the default point of contact for the operation. The point of contact is the person who will be ensuring the safety of the operation. This may or may not be the same person as the pilot, and does not have to be registered as a pilot in the UC Drone Web App.

Both the Pilot and the Point of Contact will receive emails regarding the status of the Flight Request and will be able to view any documents or communication.

A different point of contact can be selected by clicking on



By selecting the appropriate campus, the user can search for the UC affiliated contact by last, first name. From there, click on the UC affiliated contact to confirm the selection.



The aircraft, pilot and/or point of contact can always be changed by selecting the "Change Aircraft", "Change Pilot" or "Change Contact" text.

D. Flight Request

The "Flight Request" category will prompt the user for information regarding the specifics of the proposed flight. The Information subcategories will be:

a. Flight Purpose

Clicking on the dropdown menu under Flight Purpose will reveal various categories of flights, such as environmental research, filming, and so on. Select the category closest to the intent of the flight.



b. Flight Date

Flight Date refers to the date on which the proposed flight will be occurring. **Format will follow mm/dd/yyyy**.

c. Flight Time

Flight Time refers to the time at which the operation will begin. Format will follow hr-minute-second -AM/PM.

d. Expected Field time (minutes)

Expected Field time refers to how long the operation will last from arriving to location to the leave time.

e. Number of Flights

Number of flights refers to the number of flights that will occur during the field time.

f. Latitude & Longitude

Latitude and longitude can be entered manually or by utilizing the map shown underneath the Latitude & Longitude text. By scrolling to location of the operation on the map, the user can then click the position. The click will update the Latitude and Longitude text fields.

g. Filters

Selecting the filters icon will open a menu allowing users to select either standard or satellite view, different controlled airspaces, types of airports, and etc.

h. Max Distance (ft)

The max distance will be the farthest distance from the ground control station position that the UAS will travel.

i. Max Altitude (ft)

The maximum altitude will be the maximum height during the flight that the UAS will reach.

j. Are you flying over people? Y/N

The User will be prompted to select either yes or no regarding this question.

k. Are you flying near buildings? Y/N

The user will be prompted to select either yes or no regarding this question. Flying near the proximity of a building may pose a risk for the operation and those not part of the operation.

I. Comments

The comment section will be used to give a brief description of the flight, or comment on the general operation. Additional documents, such as flight path diagrams or safety mitigation plans can be added after the draft has been saved.

Once the user has finished completing each section, their request will look similar to the example shown on the following page:

Flight Information

Aircraft

Parot - Beebop 2

Registration Number: FA3YEFCLKT Storage Location: Campus & Public Safety

Change Aircraft

Pilot

Alexus Garcia agarcia275@ucmerced.edu SUAS: 3908188 Change Pilot

Contact

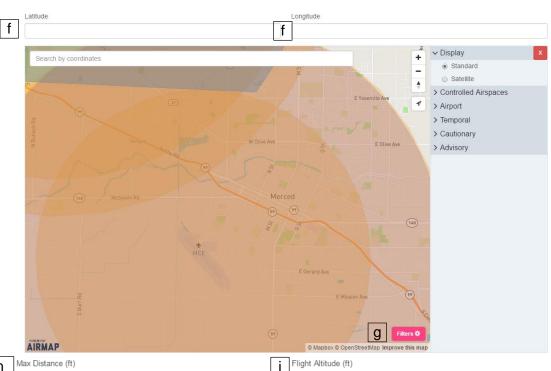
Alexus Garcia

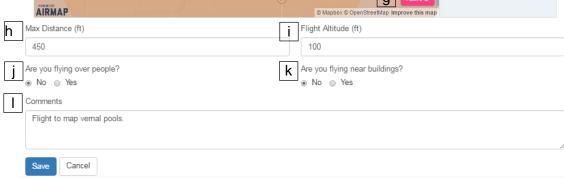
agarcia275@ucmerced.edu Change Contact

Flight Request

Flight	Purpose	

а Environmental Research Flight Time Flight Date b 11/18/2016 С 12:00 PM Expected Field Time (minutes) Number of Flights е d 60 2





Saving the Flight Request

By selecting save, the user will be prompted to a Flight Request Draft page with all the previous entered information. The page has three sections:

a) Flight Request

The Flight Request section will be a summary of the information entered on the previous page. The user can go back and edit any incorrect information using the Edit button at the bottom of the page.

b) Attachments

The Attachments section is for the user to enter in flight plans, crowd control plans, and any other documents that may be necessary to obtain approval.



By selecting the "Choose Files" icon, the user can browse their computer files and select those relevant to the mission.

Once the files have been chosen, the user must select the "Upload File(s)" icon to attach the documents to the draft.

c) Edit/Submit



At the bottom of the page, the user will be presented two options. Edit Request, and Submit Request. If all the information is correct and appropriate documents have been attached, the user can select "Submit Request."

If there are issues with entered information, the user may go back to the previous screen and fix any issues by selecting "Edit Request."

d) Delete Request

The user may delete the draft by selecting "Delete Request." This will delete all entered information and attachments from the App.

Below is an example of a completed draft with a flight plan:

Flight Information

Draft

Aircraft

Pilot

Contact Alexus Garcia

Parot - Beebop 2

Alexus Garcia Registration Number: FA3YEFCLKT agarcia275@ucmerced.edu

agarcia275@ucmerced.edu

Storage Location: Campus & Public

Safety

SUAS: 3908188

a Flight Request

Clone this request

Flight Purpose Environmental Research Date Time Nov 18, 2016 12:00 PM

Field Time 60 Number of flights

Location 37.37843487113416, -120.40285478895335

Max Distance 450 ft. Flight Altitude 100 ft. false Flying over people Flying near building false

Comments Flight to map vernal pools.

b Attachments

Choose Files No file chosen

Please attach a flight map, crowd control plan, or any other documents as necessary for approval.



Document List





Edit Request

Submit Request



Delete Request

After submission of a Flight Request, the user will be able to again see a summary of their flight request, with a "Pending Review" text in the top right corner.

Flight Information

Pending Review

Aircraft Parot - Beebop 2

Alexus Garcia

Pilot

Contact Alexus Garcia

Registration Number: FA3YEFCLKT

agarcia275@ucmerced.edu

agarcia275@ucmerced.edu

Storage Location: Campus & Public

Safety

SUAS: 3908188

Flight Request

Clone this request

Flight Purpose Environmental Research
Date Time Nov 18, 2016 12:00 PM

Field Time 60 Number of flights 2

Location 37.37843487113416, -120.40285478895335

Max Distance 450 ft.
Flight Altitude 100 ft.
Flying over people false
Flying near building false

Comments Flight to map vernal pools.

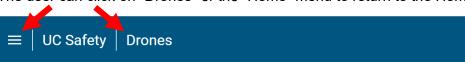
Attachments

Document List



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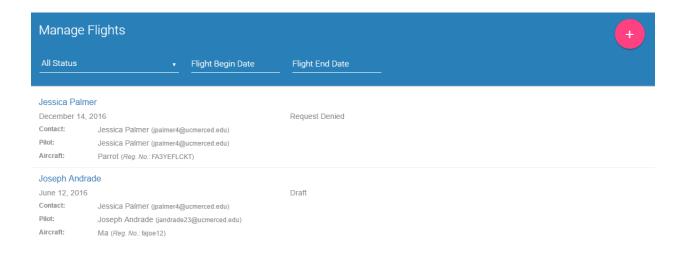
The user can click on "Drones" or the "Home" menu to return to the Home Page.



Flight Review Process

All flights must be reviewed for federal compliance and UAS safety before they can be approved. The review process validates that all federally required documentation is correct, including but not limited to aircraft registration, pilot certifications, airspace class, time of day, flights over people or other extended operations, and that appropriate safety procedures are in place. If the proposed flight occurs on UC property, the appropriate campus safety personnel may also review for campus safety.

The Flight Management page will inform the user if their flight is still pending, is approved, or denied. Users will also receive an email regarding the approval or denial of flight requests.



By clicking on the Name associated with the flight, the user will then be able to see the summary regarding the flight.

If denied, the user will be given commentary regarding the rejection. The user may edit the flight request and resubmit after making appropriate changes.

Flight Review Commenting

Comments

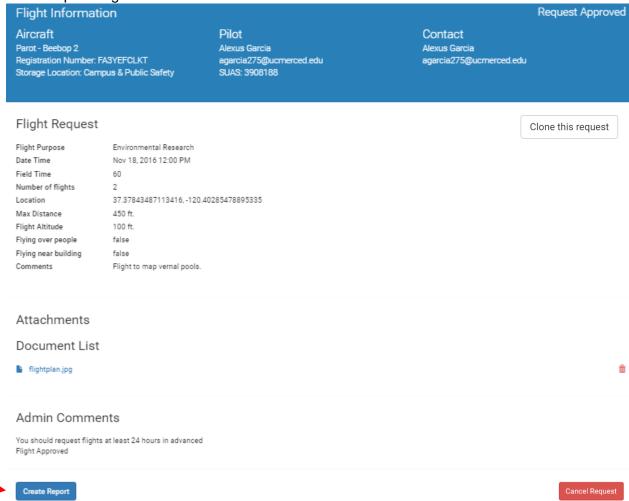
The reviewer, either a staff member from the Center of Excellence on UAS Safety, or a local campus safety coordinator, may attach additional comments or documents to the flight request. **The user should review any attached documents prior to operation**. Commenting allows staff members and users to communicate information regarding the flight request.

Brandon Stark - an hoo This will require addition	-		
Jessica Palmer - <i>a min</i> I will provide additiona			
Submit Comment			

Flight Reporting

After submitting a fight request, if the request is approved, the user can report the flight for documentation purposes. On a flight information for an approved request, the user will see a "Create Report" icon at the bottom of the summary.

An example image is shown below:



After selecting the Create Report icon, a similar page to the flight request form will appear.

All information from the flight request will be automatically entered into the created report. Information regarding the date, time and location may be edited to reflect any changes due to weather or ground hazards.

The new features for the user to enter are:

a) Duration (minutes) per flight

Input the flight duration in minutes per flight. Click on the '+' sign to add additional flights to the report.

b) Takeoff and Landing Damages

Report any damages that occurred to the UAS upon takeoff and landing, including failed takeoffs or landings. If no damages occurred, write N/A into the text box to acknowledge that the aircraft suffered no physical damage.

c) Equipment Malfunctions

Equipment malfunction lists various issues that may cause the drone to malfunction. If the issue is not listed, select "other." A dialog will pop up for the user to enter specifics about the malfunction. **Multiple may be selected**.

d) Lost Link Events

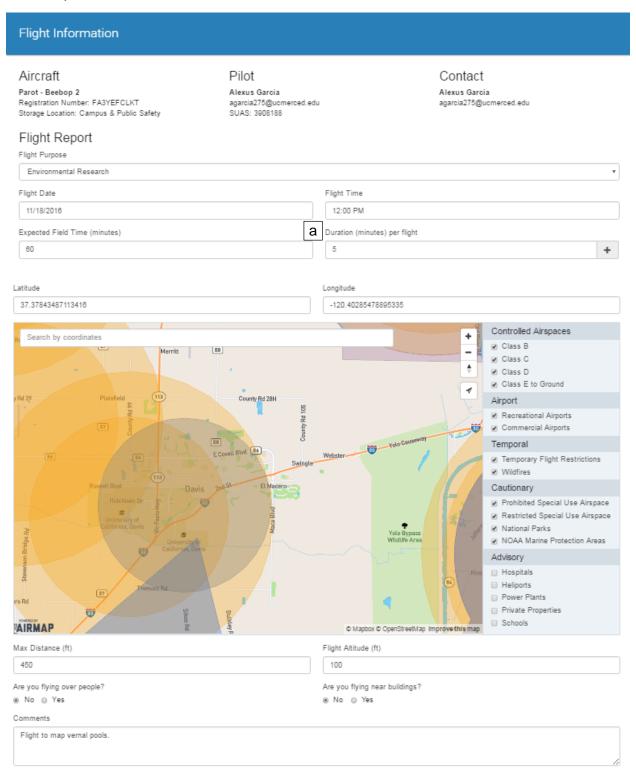
Lost link events refer to the events that cause loss of connection between the UAS and various other controls and systems. . If the issue is not listed, select "other." A dialog will pop up for the user to enter specifics about the malfunction. **Multiple may be selected**.

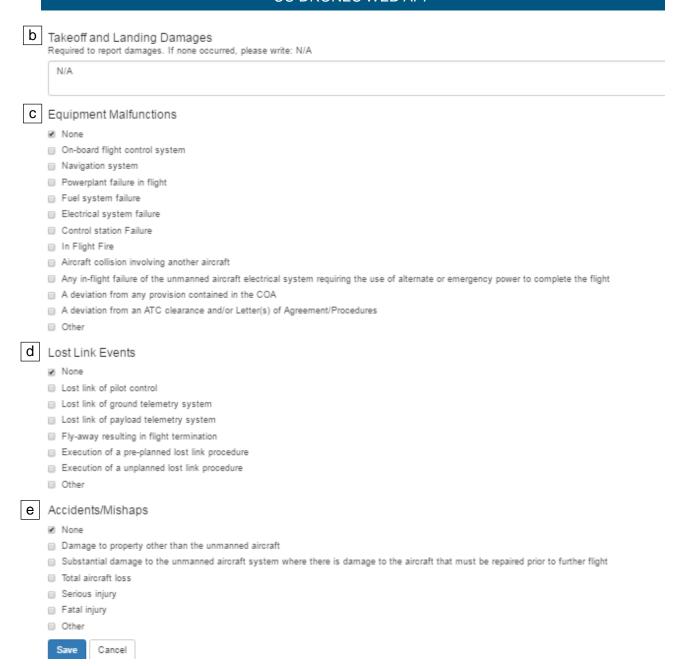
e) Accidents/Mishaps

Accidents and Mishaps will allow the user to enter any information regarding any incidents that may have occurred in the field. Damages to persons, property, and equipment will be recorded here. If the issue is not listed, select "other." A dialog will pop up for the user to enter specifics about the malfunction. **Multiple may be selected**.

When completed with the report, the user may select save.

An example is shown below:





After selecting Save, the user will be prompted to a draft page similar to the flight request page. From the page, the user can review entered information, and either select the "Edit Report" option or "Submit Report" option. When the user feels that they have accurately completed the report, they should select "Submit Report." Their summary page will update "Request Approved to "Report submitted."

Flight Information

Pilot

Alexus Garcia

Aircraft Parot - Beebop 2 Registration Number: FA3YEFCLKT

agarcia275@ucmerced.edu SUAS: 3908188 Storage Location: Campus & Public Safety

Contact Alexus Garcia agarcia275@ucmerced.edu Request Approved

Flight Request

Flight Purpose Environmental Research Date Time Nov 18, 2016 12:00 PM

Field Time 60

Number of flights 2
Location 37.37843487113416, -120.40285478895335
Max Distance 450 ft.

Flight Altitude 100 ft. Flying over people false Flying near building false

Comments Flight to map vernal pools.

Flight Report

Flight Purpose Environmental Research Date Time Nov 18, 2016 12:00 PM

60 Field Time

37.37843487113416, -120.40285478895335 Location

Max Distance 450 ft. 100 ft. Flight Altitude Flying over people Flying over peopie
Flying near building false
-- Flight to map vernal pools.

Flight Durations 5 minutes

Takeoff and Landing

Damages

Equipment Malfunctions - None Lost Link Events - None Accidents/Mishaps - None

Attachments

Document List

flightplan.jpg

Admin Comments

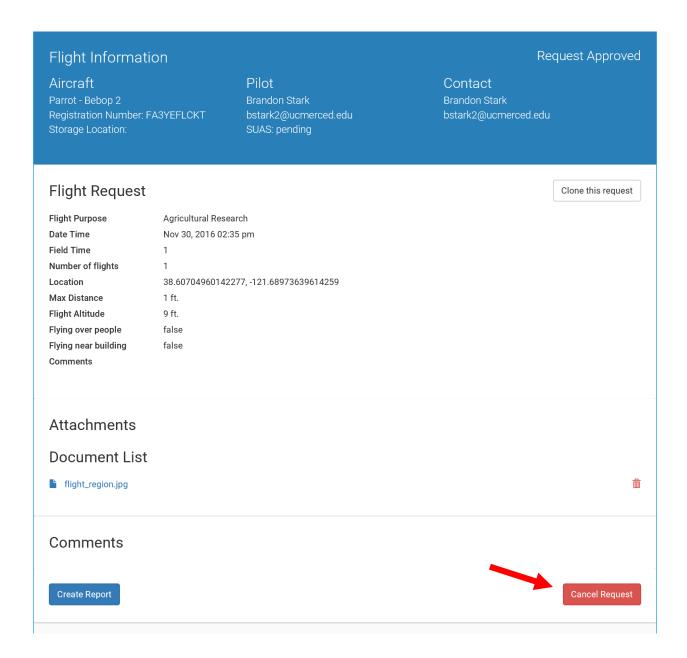
You should request flights at least 24 hours in advanced Flight Approved



The flight is considered complete after a follow-up review by the Center of Excellence on **UAS Safety.**

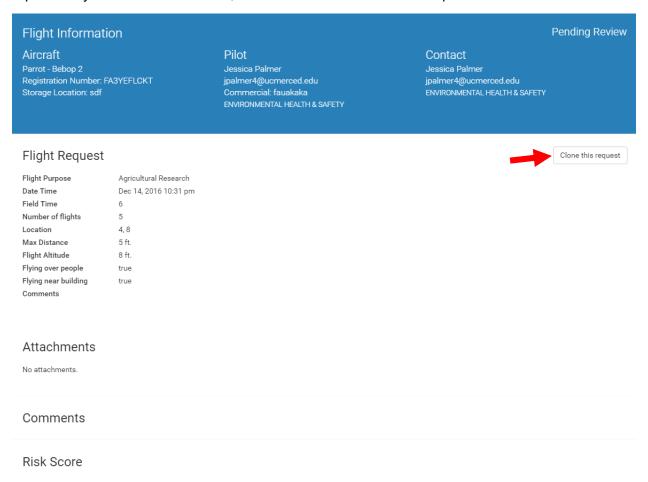
Canceling a Flight Request

A flight request can be canceled after it has been approved. This option can be used if the user needs to reschedule a flight or a change in situation. The flight request is returned to draft status and the user can edit or delete the flight request.



Cloning a Flight

A flight request or report can be cloned for repeat flight requests. Click on the flight request or report that you would like to clone, and click on the "Clone this Request" button.



A new flight request is generated that has all of the same information pre-loaded except time and date. An additional comment line is added in the comment box to indicate that this is a repeat or cloned operation

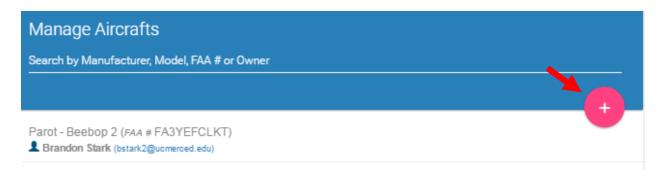
Comments

Repeat from operation on Fri Feb 24 2017 10:00 am - Testing aircraft performance

Manage Aircrafts:

The Manage Aircrafts page allows the user to add aircraft for use in the UC Drones web app or edit their existing aircraft.

As an example, a Manage Aircrafts page for a user who has already entered in an aircraft will list it below:



Adding an Aircraft

To add an aircraft, select the + icon in the top right corner to bring up the "Register an Aircraft" page

The Registering an Aircraft page has 5 sections:

A. Manufacturer

Manufacturer refers to the company that the drone was produced from. Aircraft built from kits or parts may use the manufacturer of the kit or the campus/department that built the aircraft.

B. Model

Model refers to the type or model as named by the manufacturer. Aircraft built from kits or parts may use the model name of the kit or a short description.

C. FAA Registration Number

The FAA registration number is the number assigned by the FAA when the aircraft is registered to the FAA Database. **Aircraft that are operated exclusively indoors must follow their campus procedures for registration.**

D. Storage Location

The storage location is the department, lab, or office where the UAS is kept when not in use.

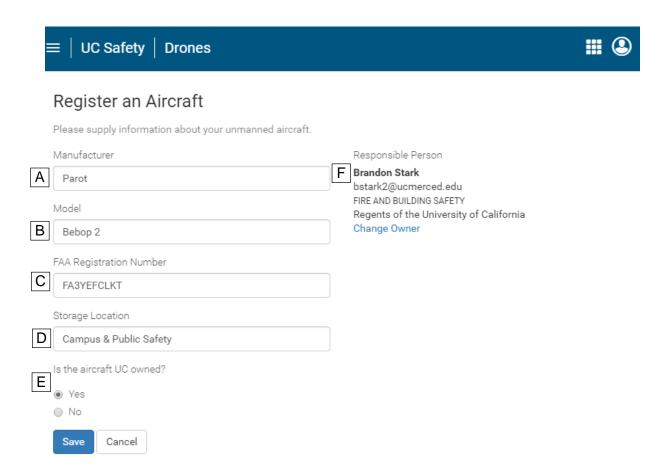
E. UC Owned

Select yes if the aircraft is owned by the Regents of the University of California, select no if the aircraft is a personal UAS.

F. Responsible Person

The responsible person is the person designated with handling the aircraft when issues arise. **The responsible person may be edited at any time**.

An example of a registration is shown below:



Editing an Aircraft

To edit an aircraft, select the name of the aircraft to bring up the "Register an Aircraft" page prepopulated with the aircraft's information.

Pilot

From the Home Page, if the user selects the Pilot Icon, the user will be presented with a Register screen.

On the register screen, there will be 3 categories:

- A. Certificate Type
 - Select the appropriate certificate type as given by the FAA. Students or others not required to have an FAA Certificate may select the "Students/No Certificate" option.
- B. Certificate #

The Certification number will be the number assigned by the FAA to the pilot. Those waiting for their sUAS certificate number may put "pending" and update their profile at a later time. A student does not require a certificate number but must enter "None" in this field.

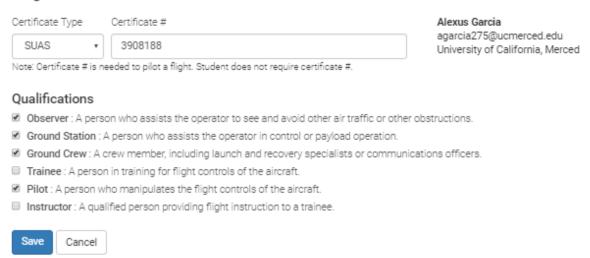
C. Qualifications

The Qualification list provides various options for the user to select. The user should select the options that meet their level of understanding. **Standards for qualifications are under development and will be implemented in a future release**.

Users may update their own information from the dashboard at any time.

An example registration is shown below:

Register



Please report any issues to erm@ucop.edu.

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