

## ASRS Database Report Set

# Unmanned Aerial Vehicle (UAV) Reports

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Report Set Description.....	A sampling of reports involving Unmanned Aerial Vehicle (UAV) events.
Update Number.....	11
Date of Update .....	February 28, 2018
Number of Records in Report Set.....	50
Number of New Records in Report Set .....	50
Type of Records in Report Set.....	For each update, new records received at ASRS will displace a like number of the oldest records in the Report Set, with the objective of providing the fifty most recent relevant ASRS Database records. Records within this Report Set have been screened to assure their relevance to the topic.

National Aeronautics and  
Space Administration

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Moffett Field, CA 94035-1000



TH: 262-7

**MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data**

**SUBJECT: Data Derived from ASRS Reports**

The attached material is furnished pursuant to a request for data from the NASA Aviation Safety Reporting System (ASRS). Recipients of this material are reminded when evaluating these data of the following points.

ASRS reports are submitted voluntarily. The existence in the ASRS database of reports concerning a specific topic cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System.

Information contained in reports submitted to ASRS may be amplified by further contact with the individual who submitted them, but the information provided by the reporter is not investigated further. Such information represents the perspective of the specific individual who is describing their experience and perception of a safety related event.

After preliminary processing, all ASRS reports are de-identified and the identity of the individual who submitted the report is permanently eliminated. All ASRS report processing systems are designed to protect identifying information submitted by reporters; including names, company affiliations, and specific times of incident occurrence. After a report has been de-identified, any verification of information submitted to ASRS would be limited.

The National Aeronautics and Space Administration and its ASRS current contractor, Booz Allen Hamilton, specifically disclaim any responsibility for any interpretation which may be made by others of any material or data furnished by NASA in response to queries of the ASRS database and related materials.

*Linda J. Connell*

Linda J. Connell, Director  
NASA Aviation Safety Reporting System

## CAVEAT REGARDING USE OF ASRS DATA

Certain caveats apply to the use of ASRS data. All ASRS reports are voluntarily submitted, and thus cannot be considered a measured random sample of the full population of like events. For example, we receive several thousand altitude deviation reports each year. This number may comprise over half of all the altitude deviations that occur, or it may be just a small fraction of total occurrences.

Moreover, not all pilots, controllers, mechanics, flight attendants, dispatchers or other participants in the aviation system are equally aware of the ASRS or may be equally willing to report. Thus, the data can reflect **reporting biases**. These biases, which are not fully known or measurable, may influence ASRS information. A safety problem such as near midair collisions (NMACs) may appear to be more highly concentrated in area “A” than area “B” simply because the airmen who operate in area “A” are more aware of the ASRS program and more inclined to report should an NMAC occur. Any type of subjective, voluntary reporting will have these limitations related to quantitative statistical analysis.

One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the **lower measure** of the true number of such events that are occurring. For example, if ASRS receives 881 reports of track deviations in 2010 (this number is purely hypothetical), then it can be known with some certainty that *at least* 881 such events have occurred in 2010. With these statistical limitations in mind, we believe that the **real power** of ASRS data is the **qualitative information** contained in **report narratives**. The pilots, controllers, and others who report tell us about aviation safety incidents and situations in detail – explaining what happened, and more importantly, **why** it happened. Using report narratives effectively requires an extra measure of study, but the knowledge derived is well worth the added effort.

# Report Synopses

ACN: 1505072 *(1 of 50)*

#### Synopsis

UAV Operator reported loss of aircraft control resulting in ground impact with some damage to the UAV.

ACN: 1505053 *(2 of 50)*

#### Synopsis

Super Decathlon pilot reported inadvertently climbing into Class C airspace while avoiding what was probably a UAV in the vicinity of OMN airport.

ACN: 1502686 *(3 of 50)*

#### Synopsis

A321 flight crew reported being distracted by reports of a drone on departure from LAX.

ACN: 1501248 *(4 of 50)*

#### Synopsis

A B737 Captain reported a near miss with a drone.

ACN: 1501117 *(5 of 50)*

#### Synopsis

C172 flight instructor reported a NMAC with a UAV at 6500 in the vicinity of LAS airport.

ACN: 1501108 *(6 of 50)*

#### Synopsis

A ground observer reported a UAV was operated at night over a group of people in a public park.

ACN: 1500686 *(7 of 50)*

#### Synopsis

CE-680A Captain reported a NMAC with a UAV on approach to MKE Runway 25L.

ACN: 1500518 *(8 of 50)*

#### Synopsis

PA28 pilot reported a NMAC with a UAV on approach to I19.

ACN: 1500289 *(9 of 50)*

## Synopsis

BE35 pilot reported a NMAC with a UAV at 7500 ft in the vicinity of TRL airport.

ACN: 1499604 *(10 of 50)*

## Synopsis

A Small Transport Captain reported a NMAC with a UAV operating in Boston Class B airspace without ATC knowledge. Pilot reported incident to A90 Departure, and Massachusetts State police.

ACN: 1498437 *(11 of 50)*

## Synopsis

CRJ-900 Captain reported a NMAC with a UAV on approach to CLT.

ACN: 1495784 *(12 of 50)*

## Synopsis

UAV Operator reported losing control of the aircraft following an undetermined significant failure that resulted in the UAV crashing to the ground.

ACN: 1495469 *(13 of 50)*

## Synopsis

An air taxi turboprop Captain reported being advised by air traffic control of possible birds in the vicinity of his aircraft. It appeared the target was actually a drone operating nearby, however it did not appear to be a threat, and no evasive action was required.

ACN: 1495076 *(14 of 50)*

## Synopsis

UAS Operator reported a NMAC with an unidentified small aircraft in VMC at low altitude over coastal bluffs.

ACN: 1492509 *(15 of 50)*

## Synopsis

CL300 Captain on approach to SMO reported a NMAC with two UAVs.

ACN: 1491696 *(16 of 50)*

## Synopsis

Phantom Pro 4 UAV Operator reported a collision with a tree during climb.

ACN: 1490870 *(17 of 50)*

## Synopsis

Air carrier Captain reported sighting 2 UAVs while conducting an approach at LGA. The event was reported to ATC, however no evasive action was taken.

ACN: 1489988 *(18 of 50)*

## Synopsis

SR22 pilot reported a NMAC with a drone while on a visual approach to CMA at 4000 ft.

ACN: 1489642 *(19 of 50)*

## Synopsis

CRJ200 Captain reported a close encounter with a UAV at 4000 feet on the downwind leg for Runway 27R at ORD.

ACN: 1489568 *(20 of 50)*

## Synopsis

Air carrier flight crew reported a close encounter with a "fixed wing drone" at 4000 ft while on left downwind to Runway 22 at LGA.

ACN: 1489475 *(21 of 50)*

## Synopsis

CE560 Captain reported a near miss with a UAV.

ACN: 1488815 *(22 of 50)*

## Synopsis

UAV operator reported unauthorized operation of a drone in close proximity to a moving freight train.

ACN: 1487433 *(23 of 50)*

## Synopsis

A ground observer reported noticing a UAV was operating near the stage at a concert event.

ACN: 1486594 *(24 of 50)*

## Synopsis

DAY Controller reported a drone pilot operated a drone in violation of their Authorization Request.

ACN: 1485944 *(25 of 50)*

## Synopsis

Helicopter pilot reported sighting a drone over the Griffith Park Observatory while operating at 600 AGL. The pilot altered his climb to avoid the drone.

ACN: 1485237 *(26 of 50)*

## Synopsis

A contracted drone operator reported he was alerted by the drone's sensors that he may have penetrated Class E airspace. He immediately terminated his video photography and exited the area.

ACN: 1485168 *(27 of 50)*

## Synopsis

CRJ-200 Captain reported observing a UAV during climbout from PHL.

ACN: 1484868 *(28 of 50)*

## Synopsis

EMB-145 Captain reported a NMAC with a UAV shortly after takeoff from PHL.

ACN: 1484734 *(29 of 50)*

## Synopsis

FAR Local Controller reported an operation involving a military UAV that was being conducted not in accordance with the LOA.

ACN: 1484444 *(30 of 50)*

## Synopsis

JCF TRACON Controller reported issues with a drone pilot and the possibility of flying a clearance that was supposed to be flown later.

ACN: 1483563 *(31 of 50)*

## Synopsis

A commercial UAV operator reported that a fixed wing aircraft descended and circled near their drone, interrupting a photo shoot.

ACN: 1482595 *(32 of 50)*

## Synopsis

Helicopter pilot reported a NMAC with a UAV shortly after takeoff from a hospital.

ACN: 1482511 *(33 of 50)*



## Synopsis

B737 flight crew reported a NMAC with a UAV on approach to PDX.

ACN: 1482331 *(34 of 50)*

## Synopsis

A320 Captain reported a NMAC with a UAV on approach to LAX.

ACN: 1481428 *(35 of 50)*

## Synopsis

Corporate jet Capatin reported a close encounter with a quadcopter UAS on approach to MKC.

ACN: 1480323 *(36 of 50)*

## Synopsis

CRJ700 Captain reported a NMAC with a UAV 20 NM south of LGA at 3500 ft.

ACN: 1480099 *(37 of 50)*

## Synopsis

UAV Operator reported losing radio connection with their UAV on a commercial photography mission. It has not been recovered.

ACN: 1479955 *(38 of 50)*

## Synopsis

EMB-175 Captain reported a NMAC with a UAV on approach to LAX at 9000 ft in the vicinity of FUELR.

ACN: 1477824 *(39 of 50)*

## Synopsis

UAV operator reported operating within the borders of Class E airspace.

ACN: 1476521 *(40 of 50)*

## Synopsis

CRJ-700 flight crew reported a NMAC with a UAV climbing out of LGA.

ACN: 1476358 *(41 of 50)*

## Synopsis

UAS pilot previously registered a toy UAS as per FAR 107, but the FAA website did not allow him to register a newly purchased Phantom 4 Pro. The UAS was flown then subsequently registered as a commercial UAS.

ACN: 1475371 *(42 of 50)*

### Synopsis

CRJ-200 Captain reported a NMAC with a UAV on approach to LGA in the vicinity of DIALS.

ACN: 1474497 *(43 of 50)*

### Synopsis

SYR Tower Controller reported a runway incursion due to the MQ-9 UAV taxiing too slow and an arrival landing on the runway while the drone was still exiting.

ACN: 1474478 *(44 of 50)*

### Synopsis

Pilot tying down his aircraft reported sighting a drone flying over parked aircraft at MYF at night. No NOTAMs were in effect for these flights.

ACN: 1473457 *(45 of 50)*

### Synopsis

CRJ-200 Captain reported a NMAC with a UAV on a visual approach to JFK Runway 22L.

ACN: 1472399 *(46 of 50)*

### Synopsis

Air carrier Captain reported a close encounter with a UAV on climbout from JFK Runway 31L after being informed by Departure Control that the preceding aircraft had reported sighting a drone.

ACN: 1471822 *(47 of 50)*

### Synopsis

UAV Operator reported misprogramming the UAV causing it to descend unintentionally.

ACN: 1471566 *(48 of 50)*

### Synopsis

ZZZ Tower Controller reported a military UAV exited the Delta airspace against current agreements between the FAA and military.

ACN: 1470548 *(49 of 50)*

## Synopsis

B737 First Officer reported a shiny object passed very close to the right engine while level at 15000 ft during an EWR departure.

ACN: 1470425 *(50 of 50)*

## Synopsis

Agriculture aircraft pilot reported a near miss with a UAV approximately 10 miles southeast of LRJ.

# Report Narratives

## Time / Day

Date : 201711  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Altitude.AGL.Single Value : 120

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 7  
Light : Daylight  
Ceiling.Single Value : 3000

## Aircraft

Reference : X  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Plan : None  
Mission : Test Flight  
Flight Phase : Initial Approach  
Route In Use : None  
Airspace.Class G : ZZZ

## Person

Reference : 1  
Location Of Person : Gate / Ramp / Line  
Function.Flight Crew : Pilot Flying  
Function.Ground Personnel : Other / Unknown  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Experience.Flight Crew.Total : 779  
Experience.Flight Crew.Last 90 Days : 3  
Experience.Flight Crew.Type : 2  
ASRS Report Number.Accession Number : 1505072

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Ground Event / Encounter : Ground Strike - Aircraft  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Other Person  
When Detected : In-flight  
Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

The V-10ET Unmanned Aircraft System had just completed getting some minor upgrades to the tail rotor system with a new motor to replace an older motor that had a bearing fail. On top of that it was running new code that changed how lost comms got handled so that we would not land on top of a payload carried in sling load. We had run the code in the simulator and with the tweaks, we were happy with the performance. We did a ground run of the helicopter to cycle the new batteries that we had purchased and to exercise the tail motor, which yielded nominal change in the performance.

I flew the V-10ET starting with just a normal return to service flight with maneuvering in fully stable and mission mode to run our lost comms plan to validate if it did execute the maneuver as planned. The landing plan in mission mode seemed rather aggressive but not out of control. We wanted to try it again but closer, so we flew the landing plan right in front of us. The Helicopter seemed less aggressive but when arriving at the second waypoint in the plan we experienced a loss of main rotor RPM with the piccolo flight control system commanding full up pitch collective, effectively stopping the main rotor blades. With the altitude we had and almost zero forward airspeed, an autorotation was not possible from a pilot override. Post-crash inspection showed only damage to the side frames of the helicopter, main rotor, tail rotor and swash arms. The repair cost was under 500 dollars for the items that needed repair or replacement.

Our internal investigation revealed we had a connector failure due to the new batteries being able to provide more current when needed than our old set of batteries. This caused the main flight battery connector to heat up and melt when the current draw increased beyond what the connectors were rated for. It was a combination of new batteries, new software that was more aggressive, and connectors that were sub-par for what was needed with the new software.

## Synopsis

UAV Operator reported loss of aircraft control resulting in ground impact with some damage to the UAV.

## Time / Day

Date : 201712  
Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : OMN.Airport  
State Reference : FL  
Altitude.MSL.Single Value : 900

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Night  
Ceiling.Single Value : 12000

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : DAB  
Aircraft Operator : Personal  
Make Model Name : Decathlon 8KCAB  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : None  
Mission : Personal  
Flight Phase : Climb  
Route In Use : Direct  
Airspace.Class C : DAB  
Airspace.Class E : DAB

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class E : DAB

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Flight Instructor  
Experience.Flight Crew.Total : 7000  
Experience.Flight Crew.Last 90 Days : 50  
Experience.Flight Crew.Type : 200

ASRS Report Number.Accession Number : 1505053  
Human Factors : Situational Awareness

## Events

Anomaly.Airspace Violation : All Types  
Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 10  
Miss Distance.Vertical : 5  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

While climbing out, I saw what appeared to be a small (less than 5 ft in size, may have been round) unlit unknown airborne object in flight path from the corner of my eye at the last second. Unfortunately, I am unable to describe the object better. While avoiding the object, my aircraft may have inadvertently climbed into Class C airspace prior to establishing 2 way radio communication.

## Synopsis

Super Decathlon pilot reported inadvertently climbing into Class C airspace while avoiding what was probably a UAV in the vicinity of OMN airport.



## Time / Day

Date : 201712

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.MSL.Single Value : 12000

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Climb

Route In Use.SID : DOTSS2

Airspace.Class E : SCT

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Airspace.Class E : SCT

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1502686

Human Factors : Distraction

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1502692

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Procedural : Clearance  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Human Factors  
Primary Problem : Ambiguous

## Narrative: 1

Departing LAX, DOTSS 2 departure assigned 5000 ft. We were give several turns and then direct PEVEE climbing to 9000 ft then 12000 ft then issued "climb via SID" then FL230. While in the turn to PEVEE the preceding aircraft reported sighting a drone at 13000 ft. We wanted to clarify the climb via instruction and get a vector left to avoid the area of the drone sighting. Once the Captain was able to finally ask for clarification the controller issued a climb to FL230 and stated "you're not going to make that climb restriction here's the number to call for a pilot deviation." We were still at 12000 ft and approximately 17 NM from the 15000 ft or above restriction at DOTSS when he made that pronouncement. We ended up crossing DOTSS at approximately 17000 ft.

After speaking with a supervisor at the SoCal ATC faculty, it seems the controller was a bit task saturated with the drone in the area and coordinating with other aircraft. He also stated there was no violation.

## Narrative: 2

[Report narrative contained no additional information.]

## Synopsis

A321 flight crew reported being distracted by reports of a drone on departure from LAX.

## Time / Day

Date : 201712

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Relative Position.Angle.Radial : 072

Relative Position.Distance.Nautical Miles : 33

Altitude.MSL.Single Value : 9100

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Nav In Use.Localizer/Glideslope/ILS : Runway 25L

Flight Phase : Descent

Flight Phase : Initial Approach

Route In Use.STAR : ANJLL

Airspace.Class B : LAX

## Aircraft : 2

Reference : Y

Aircraft Operator.Other

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : LAX

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Type : 2404

ASRS Report Number.Accession Number : 1501248  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : FAR  
Anomaly.Inflight Event / Encounter : Object  
Detector.Person : Flight Crew  
When Detected : In-flight

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Primary Problem : Aircraft

## Narrative: 1

During descent on the STAR and cleared for the ILS Approach, at approximately 9300 feet, the First Officer saw a white drone pass under our right wing at approximately 9100 feet.

## Synopsis

A B737 Captain reported a near miss with a drone.

## Time / Day

Date : 201712  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LAS.Airport  
State Reference : NV  
Relative Position.Angle.Radial : 100  
Relative Position.Distance.Nautical Miles : 2  
Altitude.MSL.Single Value : 6500

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : L30  
Aircraft Operator : FBO  
Make Model Name : Skyhawk 172/Cutlass 172  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : IFR  
Mission : Training  
Flight Phase : Initial Approach  
Route In Use : Vectors  
Airspace.Class B : LAS

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class B : LAS

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : FBO  
Function.Flight Crew : Instructor  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 864  
Experience.Flight Crew.Last 90 Days : 181  
Experience.Flight Crew.Type : 498

ASRS Report Number.Accession Number : 1501117  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 150  
Miss Distance.Vertical : 0  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

The problem was a near mid air collision with small drone at 6500 MSL that appeared to be moving southerly while my airplane was flying a magnetic heading of 200 approximately. Our lateral separation was between 150-200 feet. We were in the immediate vicinity of LAS, almost directly above the approach end of Runway 26L. The drone was yellow in color and circular, at most 3 feet in diameter, and did not appear fixed wing. It appeared to have some kind of design/camera at its center. We were receiving radar vectors from Las Vegas TRACON. I was scanning visually while my student was under the view limiting device. We made no evasive action, there was merely a second between the time I saw the drone and it's passing of our position. I queried Las Vegas Approach if there was any drone activity in the area, they responded there was not, I then proceeded to describe the situation, to which they asked questions regarding the drone's altitude and flight path, and prior to our hand off they said they had made a report. This near mid air collision was no fault of Las Vegas Approach or my own, rather the drone operator who violated the airspace.

## Synopsis

C172 flight instructor reported a NMAC with a UAV at 6500 in the vicinity of LAS airport.

## Time / Day

Date : 201712

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : STP.Airport

State Reference : MN

Relative Position.Distance.Nautical Miles : 4.8

Altitude.AGL.Single Value : 100

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Mission : Personal

Flight Phase : Cruise

Airspace.Class D : STP

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Personal

Function.Other

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 130

Experience.Flight Crew.Last 90 Days : 0

Experience.Flight Crew.Type : 120

ASRS Report Number.Accession Number : 1501108

Human Factors : Situational Awareness

Human Factors : Training / Qualification

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Observer

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

A small unmanned aerial systems operator was flying a multi rotor copter at night over non-participating people at [a park] in St. Paul. The operator did not maintain situational awareness and line of sight at all times as the air vehicle passed behind trees. The waterfowl in the area were disturbed by the presence of the sUAS and moved away from the sUAS. Como Lake serves as a visual reporting point for approach to St. Paul Downtown Airport. The operator was on the east side of the lake on a peninsula jutting out into the lake just inside the Class D airspace for St. Paul Downtown Airport. The sUAS was equipped with nonstandard aircraft lighting. A person with me stated they saw a second sUAS without any aircraft lighting. I was unable to see the second one. The lighted aircraft stayed over nonparticipating people for about a minute.

## Synopsis

A ground observer reported a UAV was operated at night over a group of people in a public park.



## Time / Day

Date : 201712  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : MKE.Airport  
State Reference : WI

## Environment

Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.Tower : MKE  
Make Model Name : Citation Latitude (C680A)  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Nav In Use.Localizer/Glideslope/ILS : Runway 25L  
Flight Phase : Initial Approach  
Airspace.Class C : MKE

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class C : MKE

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1500686  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

I spotted a drone which appeared to be a quadcopter go right underneath us on the localizer. It appeared to go underneath us a hundred feet or so going the opposite direction. I was right off the coast over Lake Michigan off the 25L localizer MKE.

Always keep an eye out at low altitude.

## Synopsis

CE-680A Captain reported a NMAC with a UAV on approach to MKE Runway 25L.

## Time / Day

Date : 201711

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : I19.Airport

State Reference : OH

Relative Position.Angle.Radial : 275

Relative Position.Distance.Nautical Miles : 7

Altitude.MSL.Single Value : 2500

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 10000

## Aircraft : 1

Reference : X

ATC / Advisory.CTAF : I19

Aircraft Operator : Personal

Make Model Name : PA-28 Cherokee/Archer/Dakota/Pillan/Warrior

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Descent

Route In Use : Direct

Airspace.Class E : CMH

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Crew Size.Number Of Crew : 2

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class E : CMH

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 900

Experience.Flight Crew.Last 90 Days : 5  
Experience.Flight Crew.Type : 100  
ASRS Report Number.Accession Number : 1500518  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 100  
Miss Distance.Vertical : 15  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

During descent for landing at I19, at approximately 2500 ft MSL over populated area, I observed a small black dot at my same altitude, and 1 o'clock from my position. I banked slight left to avoid the object. As I passed the object, I observed what appeared to be a stationary drone of the hobby store variety. I felt this to be a very dangerous activity on the part of the drone operator that could easily have ended in loss of life or severe damage to the aircraft if I had not seen it in time to maneuver away.

## Synopsis

PA28 pilot reported a NMAC with a UAV on approach to I19.

## Time / Day

Date : 201711

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : TRL.Airport

State Reference : TX

Relative Position.Angle.Radial : 245

Relative Position.Distance.Nautical Miles : 6

Altitude.MSL.Single Value : 7500

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

## Aircraft : 1

Reference : X

Aircraft Operator : Personal

Make Model Name : Bonanza 35

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : D10

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class E : D10

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 400

Experience.Flight Crew.Last 90 Days : 25

Experience.Flight Crew.Type : 200

ASRS Report Number.Accession Number : 1500289

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 0  
Miss Distance.Vertical : 500  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

Departed GPM at 2500 with a southerly heading until clear of Cedar Hill (all the big towers). Once clear, I started to turn left to overfly JWY and climb to 3000. After Class B, I started my climb to 7500 toward the Little Rock area. I was using Terrell (TRL) as a fix and a check for weather (altimeter) when I noticed something that looked like a bird. Since I fly a lot in the SGT area, I see a lot of birds of different types - and I thought I was seeing a bird at first. I thought - good, I'm higher and the bird should not be a factor. Then I tried to re-focus my eyes as the movement wasn't quite like a bird - close, but not the same. Worse, my brain was not making sense of what kind of bird this might be as I was trying to "see" a black vulture. What my eyes kept telling me is this black vulture had four evenly spaced red dots (as a square) on its back!

Then I got mad - that's a drone. And since I don't know a lot about them, I have no way to process how close the drone was. My best guess is within 500 ft.

My position: about 6 miles southwest of TRL at 7500 flying a magnetic heading of 065.

## Synopsis

BE35 pilot reported a NMAC with a UAV at 7500 ft in the vicinity of TRL airport.

## Time / Day

Date : 201711

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : BOS.Airport

State Reference : MA

Relative Position.Angle.Radial : 162

Relative Position.Distance.Nautical Miles : 7

Altitude.MSL.Single Value : 2700

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : A90

Aircraft Operator : Air Taxi

Make Model Name : Small Transport, Low Wing, 2 Recip Eng

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : BOS

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : BOS

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1499604

Human Factors : Situational Awareness

## Events

Anomaly.Airspace Violation : All Types

Anomaly.Conflict : NMAC

Anomaly.Deviation - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

Miss Distance.Horizontal : 200

Miss Distance.Vertical : 200

When Detected : In-flight

Result.General : Police / Security Involved

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

During climb out, I was about 2700 feet, 6-8 miles South-Southwest of Boston, I believe over the Quincy/Braintree area, I came within a couple hundred feet of drone. It was about 2 feet by 2 feet in size, black, four blade, and was rocking back and forth in the turbulence. I reported it to Boston Departure. The next controller followed up with more questions about it. After arriving at my destination, I was told to contact the Massachusetts State Police. I called and just verified what I told ATC.

## Synopsis

A Small Transport Captain reported a NMAC with a UAV operating in Boston Class B airspace without ATC knowledge. Pilot reported incident to A90 Departure, and Massachusetts State police.



## Time / Day

Date : 201711  
Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : CLT.Airport  
State Reference : NC  
Altitude.MSL.Single Value : 3000

## Environment

Flight Conditions : VMC  
Light : Dusk

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : CLT  
Aircraft Operator : Air Carrier  
Make Model Name : Regional Jet 900 (CRJ900)  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Initial Approach  
Route In Use : Visual Approach  
Airspace.Class B : CLT

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class B : CLT

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1498437  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR

Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Police / Security Involved

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

Coming through approximately 3,000 ft on the visual approach to runway 23 in CLT I noticed a drone pass by my window and off the wingtip of the aircraft by about 5 to 10 feet. It was dusk and I could not tell what type or the configuration of the drone but it did have a navigation light on it and some type of strobe/anti-collision light. I notified ATC immediately and after reaching the gate I contacted CLT Approach via phone as instructed. I was told that three aircraft behind us also reported seeing the drone and that they had shut down runway 23 approaches and gone to a parallel south operation. They also advised that the [the local] police helicopter had been dispatched and was able to find an approximate location.

Drones should have flight restrictions programmed into their software.

## Synopsis

CRJ-900 Captain reported a NMAC with a UAV on approach to CLT.

## Time / Day

Date : 201711

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 2000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

## Aircraft

Reference : X

Aircraft Operator : FBO

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Mission : Utility

Flight Phase : Descent

Airspace.Class E : ZZZ

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : FBO

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Function.Ground Personnel : Other / Unknown

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 25

ASRS Report Number.Accession Number : 1495784

## Events

Anomaly.Aircraft Equipment Problem : Critical

Anomaly.Conflict : Airborne Conflict

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Ground Event / Encounter : Ground Strike - Aircraft

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Ground Personnel

Were Passengers Involved In Event : N

When Detected : In-flight

Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

I am part of a research team. For this research project, we use [UAV] aircraft to measure atmospheric conditions. For our flights, the [UAV] climbs vertically from the takeoff point to 2,500 feet AGL. It then descends back to the takeoff point to land. As Pilot in Command for these flights, my responsibility is the same as PIC of a manned aircraft. I ensure that the aircraft is operated according to procedures, I ensure that safety is considered at all times, I watch the aircraft and scan the area for other air traffic. I have full authority under 14 CFR 91.3 to end the flight or take any other action I see fit at any time. I do not, however, manipulate the controls. A separate [UAV] operator does so under my supervision and under my authority. The incident in question occurred during descent from the 8th flight of the day. The previous 7 had gone perfectly, without incident. On this flight, during descent, the rotors and motors sounded different than they usually do during this phase of flight. Believing this to be nearby air traffic, I quickly scanned the area. Seeing no traffic, I returned my line of sight to the [UAV], which was descending more quickly than normal. Suddenly, a large cloud of smoke emanated from the [UAV]. All personnel on the ground moved away from the [UAV], which fell to the ground and landed in a patch of grass.

## Synopsis

UAV Operator reported losing control of the aircraft following an undetermined significant failure that resulted in the UAV crashing to the ground.

## Time / Day

Date : 201711

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : SLC.Airport

State Reference : UT

Altitude.MSL.Single Value : 5000

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : SLC

Aircraft Operator : Air Taxi

Make Model Name : Light Transport, Low Wing, 2 Turboprop Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Flight Phase : Initial Approach

Route In Use : Visual Approach

Airspace.Class B : SLC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Airspace.Class B : SLC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Commercial

ASRS Report Number.Accession Number : 1495469

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

Human Factors : Distraction

## Events

Anomaly.Inflight Event / Encounter : Other / Unknown

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Airspace Structure

Primary Problem : Airspace Structure

## Narrative: 1

During a night, visual approach, ATC advised us of a radar return at our "2 o'clock". They said it could possibly be birds. I, being pilot monitoring, began to visually scan because the pilot was focusing on our soon to be landing. I spotted a stationary red beacon abeam our wing and about 1-2 miles at our altitude (5,000 ft). I ultimately decided it was either a drone or a helicopter much further away. I asked tower if there was a helicopter to the east and they said negative. I told them the position of the drone and they confirmed that's where the return was coming from. As for us and our flight path the drone was not close enough to be a threat, but if we were approached runway 35 or even 32 it would have been much closer.

The only thing I could think of is to get a more precise description of the position of the drone. It was difficult preparing for landing and tending to this situation simultaneously.

## Synopsis

An air taxi turboprop Captain reported being advised by air traffic control of possible birds in the vicinity of his aircraft. It appeared the target was actually a drone operating nearby, however it did not appear to be a threat, and no evasive action was required.

## Time / Day

Date : 201710  
Local Time Of Day : 0601-1200

## Place

Altitude.MSL.Single Value : 244

## Environment

Weather Elements / Visibility.Visibility : 6  
Light : Daylight  
Ceiling.Single Value : 10000

## Aircraft : 1

Reference : X  
Aircraft Operator : Personal  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Plan : None  
Mission : Personal  
Flight Phase : Cruise  
Route In Use : None  
Airspace.Class G : ZZZ

## Aircraft : 2

Reference : Y  
Aircraft Operator : Personal  
Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Mission : Personal  
Flight Phase : Cruise  
Airspace.Class G : ZZZ

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Reporter Organization : Personal  
Function.Other.Other  
Qualification.Other  
Experience.Flight Crew.Total : 22  
Experience.Flight Crew.Last 90 Days : 10  
Experience.Flight Crew.Type : 22  
ASRS Report Number.Accession Number : 1495076  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : Published Material / Policy

Detector.Person : Other Person  
Miss Distance.Horizontal : 200  
Miss Distance.Vertical : 100  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

While flying my UAS along the shore. I experienced a near miss with a low flying aircraft. I was taking pictures of the surf and cliffs for my photography portfolio. I was flying a UAS. I launched from the parking area overlooking the beach, altitude about 71ft MSL. Visibility was reported as greater than 10 NM, winds less than 4 MPH. Although visibility along the beach was unlimited to the South, [it was] about .9 Miles to the North. I had completed filming and had instituted the automated Return-To-Home procedure. In this mode the aircraft climbs to its designated RTH altitude and autonomously flies back and lands at its launch or "Home" point. Although on autopilot the aircraft still responds to the controls. At this point, I observed and heard an aircraft flying low (a little above the top of the bluff which at that point is 71ft MSL) along the beach that had come from the North around the point. My first reaction was to dive the drone and I started to descend but I realized that it was already above the level of the approaching aircraft so I reversed throttle and continued the climb to evade. The aircraft passed below the drone which was at about 244ft MSL altitude and between the drone and I. The aircraft was a low-wing, single-engine, monoplane, dark in color. The pilot gave no indication that he saw the UAS and continued flying South along the beach.

Although the sectional charts list the Minimum Safe Altitude in the area at over 1,000 ft, aircraft sometimes fly along the beach because it is very scenic with the ocean view stretching out to the horizon. This also creates the illusion that other aircraft can be seen well in time to be avoided. But the coast is not a straight line and aircraft skimming the bluffs over the beach are masked by bluffs at points along the coast. In this case the bluff [at the] point only .9 mile away masked the aircraft from my view and vice versa and it was in my flight space with almost no time to react.

Pilots should expect to encounter [UAS]. FAA should remind pilots that even if visibility is unlimited, small drones can only be seen at best a mile away and they should avoid tracing the beach contour even if visual flight rules allow it.

## Synopsis

UAS Operator reported a NMAC with an unidentified small aircraft in VMC at low altitude over coastal bluffs.



## Time / Day

Date : 201710  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : SMO.Airport  
State Reference : CA  
Altitude.MSL.Single Value : 1900

## Environment

Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.Tower : SMO  
Make Model Name : Challenger 300  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 135  
Flight Plan : IFR  
Mission : Passenger  
Nav In Use.VOR / VORTAC : SMO  
Flight Phase : Final Approach  
Airspace.Class B : LAX

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class B : LAX

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1492509  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

### Narrative: 1

Established on VOR-A into SMO, between BEVEY and WURUD intersections, 1900 to 2000, PM saw two drones whiz by the windshield 15-20 ft on both sides, and called them out. The event was over so quickly that I did not have enough time to look up from instruments and actually see the drones.

Somebody was playing with their drones too close to an airport and too high. It is a little scary to think that these drones could have been there intentionally, and perhaps even with a small pack of explosives strapped to them. There was no time to react. We were just lucky that we missed them. Recommend stricter drone policies.

### Synopsis

CL300 Captain on approach to SMO reported a NMAC with two UAVs.

## Time / Day

Date : 201710

Local Time Of Day : 1201-1800

## Place

Altitude.AGL.Single Value : 2

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling : CLR

## Aircraft

Reference : X

Aircraft Operator : Corporate

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Plan : None

Mission : Training

Flight Phase : Climb

Route In Use : None

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Corporate

Qualification.Other

Experience.Flight Crew.Total : 100

Experience.Flight Crew.Last 90 Days : 15

Experience.Flight Crew.Type : 100

ASRS Report Number.Accession Number : 1491696

Human Factors : Situational Awareness

## Events

Anomaly.Inflight Event / Encounter : Object

Detector.Person : Other Person

Were Passengers Involved In Event : N

When Detected : In-flight

Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

## Narrative: 1

Flew DJI Inspire drone into tree. I misjudged proximity to obstacle. Damaged onboard camera and rotor blade.

## Synopsis

Phantom Pro 4 UAV Operator reported a collision with a tree during climb.

## Time / Day

Date : 201710

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : LGA.Airport

State Reference : NY

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Medium Large Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Aircraft : 3

Reference : Z

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1490870

Human Factors : Distraction

## Events

Anomaly.Conflict : Airborne Conflict  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Human Factors  
Primary Problem : Ambiguous

## Narrative: 1

We were hearing drone reports by ATC. We were eventually given a traffic advisory for the drones ourselves. We kept a look out and the First Officer spotted 2 drones flying about a half mile laterally to the right of us, and 500-1000 feet below us when we were 2 miles prior to GREKO on the approach for Runway 22 in La Guardia. He kept them in sight and we were clear of them, continuing without having to take evasive action. The sun was setting and he wasn't sure if the light was reflecting off of red paint, or if the drones were emitting a red light on each of them. We reported the drones to ATC and made a phone call to them after we parked at the gate.

## Synopsis

Air carrier Captain reported sighting 2 UAVs while conducting an approach at LGA. The event was reported to ATC, however no evasive action was taken.

## Time / Day

Date : 201710  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : CMA.Airport  
State Reference : CA  
Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 10  
Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : NTD  
Aircraft Operator : Personal  
Make Model Name : SR22  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : VFR  
Mission : Personal  
Flight Phase : Initial Approach  
Route In Use : Visual Approach  
Airspace.Class E : NTD

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class E : NTD

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 800  
Experience.Flight Crew.Last 90 Days : 61  
Experience.Flight Crew.Type : 100  
ASRS Report Number.Accession Number : 1489988  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Anomaly.Inflight Event / Encounter : Object  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 300  
Miss Distance.Vertical : 0  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

I was flying on a VFR flight plan to CMA. I was in VFR conditions with unlimited ceiling and visibility. I was at 4000 feet approaching JUREX intersection. I was given a hand-off with SOCAL to Point Mugu approach. I changed frequency at which time I saw a Florescent Orange flash go by the aircraft off my right wing at my altitude. I saw the flash of color probably less than one second and was not able to focus on the object. It was not an aircraft and was small in size. The flash I saw was a narrow horizontal shape. There was no traffic advisory by ATC. This near miss occurred just prior to my right turn onto the final approach to Runway 26 at CMA. I thought about advising Approach of the near miss with a drone but didn't due to my work load at the time of the approach and the threat had passed. Frankly at the time I couldn't think of the word drone. I am now not a fan of drones which could be catastrophic to aircraft.

## Synopsis

SR22 pilot reported a NMAC with a drone while on a visual approach to CMA at 4000 ft.



## Time / Day

Date : 201710  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ORD.Airport  
State Reference : IL  
Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : C90  
Aircraft Operator : Air Carrier  
Make Model Name : Regional Jet 200 ER/LR (CRJ200)  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Nav In Use : FMS Or FMC  
Flight Phase : Initial Approach  
Route In Use.STAR : FYTTE4  
Airspace.Class B : ORD

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class B : ORD

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1489642  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : Airborne Conflict  
Detector.Person : Flight Crew

When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

While flying the FYTTE4 RNAV STAR to ORD, we were on downwind leg for Rwy 27R, level at 4000 MSL and between the VULCN and HIMGO waypoints. I and the First Officer (FO) visually acquired a mostly stationary airborne object ahead of the aircraft and to the right side of our flight path. We quickly closed with the object and then the object passed off the right side of the aircraft at very close range. Although I had initially identified the object as looking like some drifting party-type balloons, as we passed the object the FO stated "I think it's a drone". While I never got a good enough look to be certain that the object was a small unmanned device, the FO was in a much better position to visually track the object so I trust his judgment on the matter. In addition, I noted that the object seemed to be very nearly motionless, which would be unusual for balloons, which are generally ascending at low altitudes such as this one. After passing the object, the FO reported the presence of a possible drone just south of our course at present position. The entire event happened so quickly that as the Flying Pilot I didn't take any evasive action, since it appeared that we would miss the object narrowly off our right-hand side.

The cause of the event would appear to be someone's reckless decision to intentionally or mistakenly operate a small unmanned device in close proximity to air traffic executing arrival procedures to ORD. Education of small UAV operators is paramount to ensure that folks know that a small unmanned device can pose a significant safety hazard for even such a significantly larger aircraft such as a jet airliner. In addition, I'm certain that the technology exists to detect even small unmanned devices and alert the pilots of larger aircraft to their presence. That technology would be hugely helpful in preventing drone strikes and near misses.

## Synopsis

CRJ200 Captain reported a close encounter with a UAV at 4000 feet on the downwind leg for Runway 27R at ORD.

## Time / Day

Date : 201710

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LGA.Airport

State Reference : NY

Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Medium Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1489568

Human Factors : Situational Awareness

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1489837

## Events

Anomaly.Airspace Violation : All Types  
Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 30  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

During a flight to LGA while we were on the left downwind to Runway 22 approximately abeam LGA at 4000 ft, the FO spotted what appeared to be a fixed wing drone pass within 30 ft of the aircraft by his estimate. The crew immediately reported the drone to ATC. ATC sent the crew a number to call after the flight for additional details. The Captain did not ever see the drone, but the FO said he only just saw it as it flashed past the aircraft.

## Narrative: 2

Descending into LGA we encountered a suspected drone. We were at 4000 MSL, just east of the field preparing for an approach to Runway 22 when the encounter occurred. I made visual contact with what I thought was a large, black bird. As the object neared and passed off our right, it became clear that the object was man-made. I informed the Captain, and then ATC. I provided details included the approximate size of the object, its approximate distance from our aircraft, and our position. We did not make physical contact with the object, and the flight continued without incident.

## Synopsis

Air carrier flight crew reported a close encounter with a "fixed wing drone" at 4000 ft while on left downwind to Runway 22 at LGA.

## Time / Day

Date : 201710

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZJX.ARTCC

State Reference : FL

Altitude.MSL.Single Value : 12000

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Center : ZJX

Aircraft Operator : Corporate

Make Model Name : Citation V/Ultra/Encore (C560)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZJX

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class E : ZJX

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1489475

Human Factors : Distraction

Human Factors : Confusion

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 100  
Miss Distance.Vertical : 0  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Environment - Non Weather Related  
Primary Problem : Environment - Non Weather Related

## Narrative: 1

At 12,000 ft cruise I along with my copilot observed a drone at same level fly by pilot side window 100 ft from aircraft. Jacksonville center was advised of situation.

## Synopsis

CE560 Captain reported a near miss with a UAV.

## Time / Day

Date : 201709

Local Time Of Day : 1801-2400

## Place

Altitude.AGL.Single Value : 50

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Mission : Personal

Flight Phase : Cruise

Route In Use : None

Airspace.Class G : ZZZ

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Experience.Flight Crew.Total : 1000

Experience.Flight Crew.Last 90 Days : 50

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1488815

Human Factors : Situational Awareness

Human Factors : Training / Qualification

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Flight Crew

When Detected : Routine Inspection

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

I was operating a hobby racing drone in proximity to a moving freight train. I am a very experienced manual drone operator, and I decided to fly closely to, land on, fly under, and fly inside of, a passing cargo train. I wasn't aware, ahead of the flight, that there were

strict rules about what you can and cannot do near railroad property. The flight lasted about 3 minutes, and I landed safely, putting nothing but the drone in jeopardy. It will not be happening again.

## Synopsis

UAV operator reported unauthorized operation of a drone in close proximity to a moving freight train.



## Time / Day

Date : 201710

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 250

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Night

Ceiling.Single Value : 3000

## Aircraft

Reference : X

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class G : ZZZ

## Person

Reference : 1

Reporter Organization : Personal

Function.Other

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 660

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 1487433

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Procedural : Security

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Observer

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

I observed an unmanned UAS hovering stationary in the immediate vicinity of the [concert event] stage at approximately 250 AGL in close proximity to a large pyrotechnic display associated with the concert performance.

In my opinion, this operation was unsafe and should have been prohibited in light of recent events by the establishment of a TFR for security purposes.

## Synopsis

A ground observer reported noticing a UAV was operating near the stage at a concert event.

## Time / Day

Date : 201710  
Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : DAY.Airport  
State Reference : OH  
Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.Tower : DAY  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Crew Size.Number Of Crew : 1  
Flight Phase : Cruise  
Route In Use : None  
Airspace.Class C : DAY

## Person

Reference : 1  
Location Of Person.Facility : DAY.Tower  
Reporter Organization : Government  
Function.Air Traffic Control : Local  
Qualification.Air Traffic Control : Fully Certified  
Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 4  
ASRS Report Number.Accession Number : 1486594  
Human Factors : Communication Breakdown  
Human Factors : Situational Awareness  
Communication Breakdown.Party1 : ATC  
Communication Breakdown.Party2 : Flight Crew  
Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Procedural : Published Material / Policy  
Detector.Person : Air Traffic Control  
When Detected : Pre-flight  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Manuals  
Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Aircraft  
Primary Problem : Company Policy

## Narrative: 1

I was working Local Control, the Controller in Charge (CIC) took a phone call on recorded line. The person on the line asked if he was [our Air Traffic Manager (ATM)]. The CIC stated "no". The caller then stated that the ATM had told him to call this number prior to departing his drone. There was zero prior coordination with the controllers. The caller stated he would remain north of a particular road and be below 300 feet. The CIC asked them to notify us after they were complete with their operations. We found a binder in the tower, in the back of the cab, that has the drone procedures. We found the drone pilots Authorization Request that was denied. He was then issued a waiver that stated he was to remain below 75 feet. Based on our grid and how close to our airport this was going to take place, he should not have been granted approval in the first place.

There was also an email between the pilot and the ATM where the pilot stated he would be climbing to at least 100 feet and up to 300 feet on one. This is completely against the waiver the pilot received. The ATM would've known about this. The flight path of the drone put them in direct conflict with departures and was especially a conflict for two aircraft I had doing pattern traffic. This was very unsafe. It would have been nice to know about a drone that's in direct conflict with aircraft in my airspace. There should have been notification that this was going to take place. There should also have been someone instructing the drone pilot to adhere to his 75 foot restriction.

## Synopsis

DAY Controller reported a drone pilot operated a drone in violation of their Authorization Request.

## Time / Day

Date : 201709

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : BUR.Airport

State Reference : CA

Altitude.AGL.Single Value : 600

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Haze / Smoke

Weather Elements / Visibility.Visibility : 6

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Corporate

Make Model Name : Helicopter

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Photo Shoot

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : SCT

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Rotorcraft

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1485944

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : Airborne Conflict

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

While filming scenic shots of Los Angeles over and around the Griffith Park Observatory, I observed a drone maneuvering in flight well above the observatory and had to maneuver below and close to the observatory to avoid the drone. I went into a hover at 600 AGL south of the Observatory and while climbing, had to abort the climb once again due to drone interference. I have had a number of drone encounters in the past six months and I believe it is only a matter of time until a midair occurs. Helicopters typically fly at 500 AGL and it seems that private drone operators are not respecting that airspace or the drone FARs.

## Synopsis

Helicopter pilot reported sighting a drone over the Griffith Park Observatory while operating at 600 AGL. The pilot altered his climb to avoid the drone.

## Time / Day

Date : 201709

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : EAR.Airport

State Reference : NE

Altitude.AGL.Single Value : 60

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Dusk

Ceiling.Single Value : 8500

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Plan : VFR

Mission : Photo Shoot

Flight Phase : Cruise

Airspace.Class E : EAR

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Contracted Service

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 15

ASRS Report Number.Accession Number : 1485237

Human Factors : Situational Awareness

Human Factors : Confusion

## Events

Anomaly.Airspace Violation : All Types

Anomaly.Deviation - Procedural : FAR

Detector.Automation : Aircraft Other Automation

When Detected : In-flight

Result.Flight Crew : Became Reoriented

Result.Flight Crew : Exited Penetrated Airspace

## Assessments

Contributing Factors / Situations : Airspace Structure

Primary Problem : Airspace Structure

## Narrative: 1

I went to shoot some footage using my DJI Mavic Pro (Drone) after being contracted by a company. I checked flight maps before flying to make sure that I would not enter Class E Airspace during the shoot as the Class E airspace for Kearney Regional Airport (EAR) extended down to the surface near where I was flying. During takeoff and the first 15 minutes of my flight, everything was running as it should. Aircraft had no issues, and I was NOT in Class E Airspace; however, as I went to capture the east side of the building, my DJI GO 4 app began warning me that I had entered Class E airspace of the Kearney Regional Airport. After discovering this, I ended my recording and proceeded to land in a safe location outside of Class E airspace. I did not exceed 60 feet AGL during my flight at any time.

I believe this problem resulted because of how close the event was to Class E airspace and also due to the fact that I could not zoom in close enough with my map resource ([www.skyvector.com](http://www.skyvector.com)). Based on what I read on my map, I believed that I was not going to enter Class E airspace during my flight.

No aircraft were harmed. My maximum altitude was 60 feet AGL. There was no risk of any aircraft colliding. No aircraft had to take action to avoid a collision.

## Synopsis

A contracted drone operator reported he was alerted by the drone's sensors that he may have penetrated Class E airspace. He immediately terminated his video photography and exited the area.



## Time / Day

Date : 201710

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : PHL.Airport

State Reference : PA

Altitude.MSL.Single Value : 4500

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : PHL

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : PHL

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : PHL

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1485168

Human Factors : Confusion

Human Factors : Distraction

## Events

Anomaly.Conflict : Airborne Conflict

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

During climb out from Philadelphia International the aircraft was climbing to maintain the initial altitude when I detected an object in my left peripheral vision. We were located just east of the downtown area of Philadelphia climbing through 4,500 feet. I turned my head and saw what appeared to be a four bladed unmanned aerial vehicle just west of our path and several hundred feet below the aircraft by the time we passed abeam the object. No evasive action was required nor taken.

The controller was busy communicating to another aircraft and soon as the frequency cleared I reported seeing a "drone" just to the west of us near the downtown area. We were given a new frequency to check in with New York Center. Upon checking in with New York I was told to contact Philadelphia Approach with a phone number

After completing my flight I contacted to the number. I was asked what type of vehicle it was. What color I thought it was, Brown or gold color. What weight did I think it was; I thought it was large but could not say if it was 50 pounds or more and estimated it might have been 500 feet below us. All these variables were difficult to estimate since we were climbing but I did appear to large and did not appear to move.

## Synopsis

CRJ-200 Captain reported observing a UAV during climbout from PHL.

## Time / Day

Date : 201709

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : PHL.Airport

State Reference : PA

Altitude.AGL.Single Value : 500

## Environment

Flight Conditions : VMC

Light : Dusk

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : PHL

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 145 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : PHL

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : PHL

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1484868

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Flight Crew

When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

We were cleared for takeoff on runway 27L with a turn to 230. It was dusk/night as we started the roll. Everything was normal through 300 ft. I noticed what I assumed to be a bird up ahead at about 11 o'clock. As we got closer I noticed it wasn't moving; almost like a balloon. I had started my turn to 230 as we passed about 500 ft. I asked my FO if he saw what I was seeing but he was busy cleaning up the aircraft. As we got through 700 ft I noticed the green and red lights on what I now figured was a drone. We ended up passing the drone around 200 ft away and it appeared to be around 600 ft agl. At its closest, I could make out 2 rotors and 2 bright lights; one red and one green. It was painted black.

Once we were checked in with departure, the FO [notified] them of the drone. We gave them all the info they requested and they asked us to call them after landing. After landing, I called ATC and answered all of their questions. It appeared like a black bird originally. So we treated as you would a bird. We kept the distance and continued as assigned. It wasn't until we got closer that we noticed the different attributes of the drone. We were always a safe distance away. We continued the flight after notifying ATC.

## Synopsis

EMB-145 Captain reported a NMAC with a UAV shortly after takeoff from PHL.

## Time / Day

Date : 201709

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : FAR.Tower

State Reference : ND

Altitude.AGL.Single Value : 1000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : FAR

Aircraft Operator : Military

Make Model Name : UAV - Unpiloted Aerial Vehicle

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Initial Approach

Route In Use : Visual Approach

Airspace.Class D : FAR

## Aircraft : 2

Reference : Y

ATC / Advisory.Tower : FAR

Aircraft Operator : Air Taxi

Make Model Name : Small Transport

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 135

Flight Plan : IFR

Flight Phase : Initial Approach

Route In Use : Visual Approach

Airspace.Class D : FAR

## Aircraft : 3

Reference : Z

ATC / Advisory.Tower : FAR

Aircraft Operator : FBO

Make Model Name : Small Aircraft, High Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Training

Flight Phase : Initial Approach

Airspace.Class D : FAR

## Person

Reference : 1  
Location Of Person.Facility : FAR.Tower  
Reporter Organization : Government  
Function.Air Traffic Control : Instructor  
Function.Air Traffic Control : Ground  
Function.Air Traffic Control : Local  
Qualification.Air Traffic Control : Fully Certified  
ASRS Report Number.Accession Number : 1484734  
Human Factors : Confusion  
Human Factors : Situational Awareness  
Human Factors : Distraction

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : Clearance  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

I was conducting training during a session on LC/GC. My trainee was working Aircraft X in the local traffic pattern on runway 36. He also had Aircraft Z in the traffic pattern on runway 36 and Aircraft Y was inbound on a visual approach to runway 9. Aircraft X was in the right downwind and told to extend downwind, the purpose of this was for Aircraft X to do his option after Aircraft Y had landed and exited the runway. The military flies the UAVs and is restricted to only flying in the Class Delta. The trainee had timed it appropriately so he would turn Aircraft X's base prior to the edge of the Delta and the conflict would be resolved. The pilot of Aircraft X said they needed to turn their base early (about 2 miles from the airport). The trainee reluctantly told Aircraft X to turn their base. The supervisor in the tower cab immediately spoke up that the UAVs shouldn't be extended in that area as they "could lose their engine over populated areas" and would rather do 360's in the downwind or enter high key over the airport. Aircraft X was short final runway 36 and was a conflict with Aircraft Y landing runway 9. The trainee initiated a go around to Aircraft X. This created an unsafe situation as we didn't know these unmanned planes had these special restrictions. This situation wasn't busy or complex, but it created a situation where if Aircraft Y needed to go around for any reason, he would have been in conflict with Aircraft X, who was also going around, they would have met airborne over the intersection of runway 36 and 9. To make it worse, Aircraft Z was in the right downwind across the departure path of runway 9.

I have only worked the local unmanned aircraft flown by our military while training and only a few times, but I have noticed the extra care that needs to be taken while working these aircraft. These are VFR aircraft in the traffic pattern, but they are unable to see and avoid. They cannot follow traffic and their traffic patterns need to be completely controlled by the controllers, their bases need to be called to follow traffic and for wake turbulence delays. Not only is this extra work to be constantly watching and timing their patterns, we

also need to be mindful if the aircraft goes lost link, where it will fly the shortest route to its lost link orbit location. This could mean the aircraft will immediately make a turn across the airport, if we don't see it happen soon enough and take action to move everyone else, we could have an unmanned aircraft cutting off and flying into arrivals or departures from any one of our three runways. Now management is telling us also that we also need to keep them away from populated areas and that they worry about their engines quitting. I'm not sure why these aircraft are more susceptible to lose an engine than any other single engine aircraft, but if they are and the operators want to remain clear of populated areas, that needs to be addressed in the LOA that they have with tower. The military unit has been vocal about wanting to fly both of their UAVs in the pattern at the same time. There are times without them when it is busy and we don't have much room in our local traffic pattern. Sometimes aircraft need to extend and sometimes they need to exit the delta. This is something we expect all aircraft in our pattern to be able to accept and we shouldn't have to make exceptions that jeopardize the safety of others, whether it be the flying public or people on the ground.

## Synopsis

FAR Local Controller reported an operation involving a military UAV that was being conducted not in accordance with the LOA.

## Time / Day

Date : 201709

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : JCF.TRACON

State Reference : CA

Altitude.MSL.Single Value : 51000

## Environment

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : JCF

Aircraft Operator : Military

Make Model Name : UAV - Unpiloted Aerial Vehicle

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Training

Flight Phase : Cruise

Airspace.Class A : JCF

Airspace.Special Use : R2508

## Person

Reference : 1

Location Of Person.Facility : JCF.TRACON

Reporter Organization : Government

Function.Air Traffic Control : Approach

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

ASRS Report Number.Accession Number : 1484444

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Situational Awareness

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Airspace Violation : All Types

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Detector.Person : Air Traffic Control

When Detected : In-flight



Result.Flight Crew : Returned To Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Human Factors

## Narrative: 1

Aircraft X inquired if he had a flight plan in the computer for XA:00, I had flight data check and there was a flight plan proposed at XA:00 via the BTY244044 (BTY 244 radial at 44 nm) to the DAG356041 (DAG 356 radial at 41 nm) with several more fixes and clearance limit of the BTY 244 radial at 44 nm. At the time Aircraft X was operating on a complex clearance at or above FL500 which requires the aircraft to remain within the R-2508 complex. At XA:00 Aircraft X requested his IFR clearance. I issued Aircraft X a clearance to the BTY244044 via the BTY244044 fix then as filed and to cross the R-2508 boundary in a block altitude FL510-FL590. At this point Aircraft X is east-southeast of the BTY244044 heading north so I expected he would go past the fix and turn around and join the flight plan route. A few minutes later I observe Aircraft X in the far northeast corner of R-2508 about to spill-out of R-2508 as Aircraft X had never crossed the R-2508 boundary outbound on the flight plan route they are still required to comply with their complex clearance as IFR services are not being provided to participating aircraft until they exit on their assigned route. I issued a boundary alert to Aircraft X and to turn south. Whiskey alerts were completed with ZOA 33 and ZLA 16. Aircraft X continued to fly northbound I then instructed them to turn south immediately as they were now 5 nm outside the airspace. The pilot snapped back that he was on an IFR clearance. I informed him that the clearance I had was the BTY244044 direct DAG356041 and within seconds the pilot replied they were turning south to join the proper route.

I suspect what happened here is that Aircraft X will file multiple flight plans with different proposed times and so when the asked about the XA:00 clearance there were no other XA:00 proposed time but there was a later clearance with a XD:00 proposed time and I think they started to fly that flight plan versus the one they were actually cleared.

## Synopsis

JCF TRACON Controller reported issues with a drone pilot and the possibility of flying a clearance that was supposed to be flown later.

## Time / Day

Date : 201709

Local Time Of Day : 0601-1200

## Place

Altitude.AGL.Single Value : 190

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 7

Light : Daylight

## Aircraft : 1

Reference : X

Aircraft Operator : Corporate

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Plan : None

Mission : Photo Shoot

Flight Phase : Cruise

Route In Use : None

Airspace.Class G : ZZZ

## Aircraft : 2

Reference : Y

Aircraft Operator : Personal

Make Model Name : Small Aircraft, High Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Mission : Personal

Flight Phase : Cruise

Airspace.Class G : ZZZ

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 500

Experience.Flight Crew.Last 90 Days : 3

Experience.Flight Crew.Type : 10

ASRS Report Number.Accession Number : 1483563

Human Factors : Workload

Human Factors : Distraction

## Events

Anomaly.Conflict : Airborne Conflict  
Detector.Person : Other Person  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Human Factors  
Primary Problem : Ambiguous

## Narrative: 1

Flying a UAS on a photo mission near a major road early in the morning. UAS was being flown at an altitude of less than 200 feet and below the level of a nearby cell tower. Aircraft approached from out of the sun and came over the top of the UAS before pilot could take any evasive action. Pilot of the aircraft spotted the UAS and then began to circle around the UAS as if to spot what the UAS was taking pictures of. Eventually left the area.

This is at least the second time a transient aircraft has come over to see what a UAS is doing and has hindered operations. In this particular case, the airplane appeared to be lower and closer to the UAS. Landing of the UAS was considered but not done because the airplane left as quickly as he showed up. In previous encounters, I have landed the UAS and waited for the aircraft to depart.

## Synopsis

A commercial UAV operator reported that a fixed wing aircraft descended and circled near their drone, interrupting a photo shoot.

## Time / Day

Date : 201709

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 100

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Helicopter

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Mission : Ambulance

Flight Phase : Climb

Airspace.Class G : ZZZ

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class G : ZZZ

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Rotorcraft

ASRS Report Number.Accession Number : 1482595

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

Miss Distance.Horizontal : 0

Miss Distance.Vertical : 25

When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

Near midair [with] a small drone flying one block east of the hospital. Our aircraft was on initial climb out at approximately 65 knots and was climbing from helipad to 2200 MSL. Elevation [at] time of near miss was probably 100-150 feet above helipad which is approximately 1250 MSL. The primary departure path from this helipad is standardized due to close noise sensitive areas and must be protected from drone activities and intrusions due to high flight volume around the hospital. We had to look up through the rotors to keep it in sight as it passed directly over the aircraft by about 25-50 feet. We saw it at the last second and had no time to react.

Ground all private drones. They are going to cause a mishap with a manned aircraft, the regulations for their operation do not provide helicopters with a margin of safety that is acceptable to flight crews who cannot see them because they are too small. The drones also do not have lights or markings that aid in their visual acquisition. They also do not register on TCAS or other radar systems. Alternately, "no drone" fly zones within 1 NM of all hospital helipads.

## Synopsis

Helicopter pilot reported a NMAC with a UAV shortly after takeoff from a hospital.

## Time / Day

Date : 201708

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : PDX.Airport

State Reference : OR

Altitude.MSL.Single Value : 1200

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : PDX

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class C : PDX

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class C : PDX

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Type : 5596

ASRS Report Number.Accession Number : 1482511

Human Factors : Situational Awareness

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : First Officer  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Type : 2023  
ASRS Report Number.Accession Number : 1482282

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Passenger  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 100  
Miss Distance.Vertical : 0  
When Detected : In-flight  
Result.General : Police / Security Involved

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

We were on final to RWY 28R at PDX descending through 1,200 MSL when we saw a blue quad-copter drone pass off the left side of the aircraft. We saw the drone just as it passed and did not have to maneuver to avoid. I would estimate that it was within a wingspan distance, so roughly 100 from us at the same altitude.

As passengers were deplaning, multiple passengers commented that they had seen the drone and wondered if we had seen it also. One passenger familiar with the area said that it was near the IKEA just east of PDX. I called PDX Tower and discussed the incident with them. Later in the day I received a call from the Portland police department asking questions about the incident as well.

## Narrative: 2

I was the flying pilot (FO) on flight to PDX. On final approach inside the marker I saw something blue on the left side (south) of the aircraft. We were about 3 miles from the runway and 900 ft. My first guess at the time was that the blue object was some balloons and I even brought that up during the approach. After landing and at the gate while the passengers were deplaning two passengers approached the cockpit absolutely convinced that a blue drone came really close to our aircraft during the approach. They themselves were familiar with drones and even stated the type (I believe they said it was a quadcopter). Because we saw something blue and they were convinced it was a drone and also stated the color blue my CA thought it wise to report the incident to Portland tower. I agreed. He talked to the tower on the phone and also was contacted by the police and gave location information of the incident.

## Synopsis

B737 flight crew reported a NMAC with a UAV on approach to PDX.

## Time / Day

Date : 201709

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.MSL.Single Value : 1300

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : LAX

Aircraft Operator : Air Carrier

Make Model Name : A320

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use.Localizer/Glideslope/ILS : Runway XX

Flight Phase : Final Approach

Airspace.Class B : LAX

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : LAX

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1482331

## Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

Miss Distance.Horizontal : 0

Miss Distance.Vertical : 50



When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Airspace Structure

Contributing Factors / Situations : Human Factors

Primary Problem : Airspace Structure

## Narrative: 1

At about 1300 MSL on the ILS I spotted what I thought was a big black bird and told the FO to avoid it. When we passed under it by 50 ft we saw it was a black with white striped drone. We told the tower and continued uneventfully to land.

## Synopsis

A320 Captain reported a NMAC with a UAV on approach to LAX.

## Time / Day

Date : 201709

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : MKC.Airport

State Reference : MO

Relative Position.Distance.Nautical Miles : 5

Altitude.MSL.Single Value : 1900

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : MKC

Aircraft Operator : Air Taxi

Make Model Name : Medium Large Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class D : MKC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class D : MKC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1481428

## Events

Anomaly.Conflict : NMAC

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Inflight Event / Encounter : Object

Detector.Person : Flight Crew

Miss Distance.Horizontal : 500  
Miss Distance.Vertical : 100  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

At 4.9 DME from MKC and at 1900 MSL, the Pilot Flying noticed a large quadcopter at our 10 o'clock position from the flight deck. Approximate separation was 500 ft laterally and 100 ft below the aircraft. Due to parallax while on the approach it was not possible to determine if the UAS was maneuvering but it was determined that the incident UAS was not a threat and no aircraft approach adjustment was necessary. The incident location and altitude was relayed to Tower.

## Synopsis

Corporate jet Capatin reported a close encounter with a quadcopter UAS on approach to MKC.

## Time / Day

Date : 201709

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LGA.Airport

State Reference : NY

Altitude.MSL.Single Value : 3500

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 700 ER/LR (CRJ700)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1480323

## Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Airspace Structure

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

## Narrative: 1

Approximately 20 nm south of LGA at 3500 ft we encountered what appeared to be a drone. We noticed it at our 1 o'clock and slightly low and it passed immediately off our right wing. We were unsure of its identity at first, but the FO reported that just before we were abeam it, it made an immediate turn to the east away from us. We reported to ATC without delay and they handed us off to the next frequency.

## Synopsis

CRJ700 Captain reported a NMAC with a UAV 20 NM south of LGA at 3500 ft.

## Time / Day

Date : 201709

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : PHX.Airport

State Reference : AZ

Relative Position.Angle.Radial : 019

Relative Position.Distance.Nautical Miles : 6

Altitude.AGL.Single Value : 100

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Corporate

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Plan : None

Mission : Photo Shoot

Flight Phase : Cruise

Route In Use : None

Airspace.Class E : P50

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Corporate

Function.Flight Crew : Other / Unknown

ASRS Report Number.Accession Number : 1480099

Human Factors : Situational Awareness

Analyst Callback : Completed

## Events

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Company Policy

Contributing Factors / Situations : Procedure

Primary Problem : Ambiguous

## Narrative: 1

Started using a preprogrammed flight path. Three minutes into a fifteen minute flight, radio connection was lost with aircraft. Attempted to use "return to home" function and manual control but aircraft would not respond. Aircraft flew beyond line of sight and has yet to be recovered.

#### Callback: 1

Contacted reporter who confirmed that the UAV had still not been recovered and added that the UAV was lost in a partially mountainous or hilly area with some large private residences scattered about. The local police were notified of the loss.

#### Synopsis

UAV Operator reported losing radio connection with their UAV on a commercial photography mission. It has not been recovered.

## Time / Day

Date : 201709

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : LAX.Airport

State Reference : CA

Altitude.MSL.Single Value : 9000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : SCT

Aircraft Operator : Air Carrier

Make Model Name : EMB ERJ 170/175 ER/LR

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Nav In Use : GPS

Flight Phase : Initial Approach

Route In Use.STAR : HLYWD 1

Airspace.Class B : LAX

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : LAX

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 3600

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1479955

## Events



Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 0  
Miss Distance.Vertical : 300  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

My FO called my attention during our final descent into LAX on the HLYWD 1 arrival, cleared for the approach to 25L, and passing FUELR at 9,000 ft. I looked straight out 12 o'clock a little high and I saw a black object flying by us a few hundred feet above us. I asked him, do you think it was a bird? He said that he thought it was a drone. It was too late to do anything and no strike was suspected. We reported this to the ATC, who reported to other planes. The landing was concluded uneventfully.

## Synopsis

EMB-175 Captain reported a NMAC with a UAV on approach to LAX at 9000 ft in the vicinity of FUELR.

## Time / Day

Date : 201708  
Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : APG.Airport  
State Reference : MD  
Relative Position.Angle.Radial : 030  
Relative Position.Distance.Nautical Miles : 10  
Altitude.AGL.Single Value : 200

## Environment

Flight Conditions : VMC  
Weather Elements / Visibility.Visibility : 7  
Light : Daylight  
Ceiling.Single Value : 4500

## Aircraft

Reference : X  
Aircraft Operator : Corporate  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Plan : None  
Mission : Photo Shoot  
Flight Phase.Other  
Route In Use : None  
Airspace.Class E : APG

## Person

Reference : 1  
Location Of Person : Hangar / Base  
Reporter Organization : Contracted Service  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 554  
Experience.Flight Crew.Last 90 Days : 4  
Experience.Flight Crew.Type : 4  
ASRS Report Number.Accession Number : 1477824  
Human Factors : Situational Awareness

## Events

Anomaly.Airspace Violation : All Types  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
When Detected : Routine Inspection  
Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

### Narrative: 1

I operated a Mavic Pro UAV as RPIC (Remote PIC) accidentally within the border of the Class E airspace to the surface approach path into Philips AAF (APG). The problem arose due to airspace inspection that was not detailed enough. Due to my distance from controlled airports, I believed I was in Class G airspace, however, further detailed inspection of the airspace after landing the UAV showed that I was actually operating within the edge of the Class E airspace approach path. It was my understanding that two other people had confirmed that the area I operated the UAV in was Class G airspace; however they had either not done an airspace inspection or had done an incomplete airspace inspection resulting in the wrong airspace identified. As RPIC, it was my error in not double checking their airspace identification before operating the UAV. No conflicts with other aircraft occurred with this violation.

### Synopsis

UAV operator reported operating within the borders of Class E airspace.

## Time / Day

Date : 201708

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LGA.Airport

State Reference : NY

Altitude.AGL.Single Value : 1000

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : LGA

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 700 ER/LR (CRJ700)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person : 1

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1476521

Human Factors : Situational Awareness

## Person : 2

Reference : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1476811

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

Shortly after rotation from runway 4 in LGA ATC advised us of a drone sighting at 1200 ft. As we climbed through 1000 ft I keyed the mike to acknowledge ATCs advisory and a drone passed just above my windscreen. I told the Tower we saw the drone and that we may have hit it. Apparently this was construed as we did hit it. I definitely could have phrased that better. We did not see an impact and all systems were operating normally. I advised Departure we would continue on to [destination]. The FAA met us at the gate [at destination] and I made a write up in the Maintenance log to get local Maintenance to do a strike inspection. No evidence of a strike was found.

Previous aircraft reported the drone and we were not made aware of this until after we were airborne. I was conducting IOE with a new hire and my focus was more on the flight instruments than outside the aircraft.

## Narrative: 2

[Report narrative contained no additional information.]

## Synopsis

CRJ-700 flight crew reported a NMAC with a UAV climbing out of LGA.

## Time / Day

Date : 201708

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 200

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Plan : VFR

Mission : Personal

Flight Phase : Cruise

Airspace.Class E : ZZZ

## Person

Reference : 1

Location Of Person : Gate / Ramp / Line

Reporter Organization : Personal

Qualification.Flight Crew : Flight Engineer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 8800

Experience.Flight Crew.Last 90 Days : 1

Experience.Flight Crew.Type : .5

ASRS Report Number.Accession Number : 1476358

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Training / Qualification

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Flight Crew

When Detected : Pre-flight

Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : ATC Equipment / Nav Facility / Buildings

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Procedure

Primary Problem : ATC Equipment / Nav Facility / Buildings

## Narrative: 1

I registered a "toy" drone/UAS that you'd buy at Walmart for 30\$ in 2015. I paid a fee and registered before I flew it. Then I bought a Phantom 4 Pro (1600\$) and tried to register it (recreational), but it wouldn't let me add another make and model, so I figured that would satisfy 107.13. Since then I have registered it as a commercial UAS.

I didn't realize that under part 107 that ATC authorization was required to fly UAS recreational in Class E to the surface. In manned aircraft (which I have significant experience) this is not required, so I'm still a little confused.

## Synopsis

UAS pilot previously registered a toy UAS as per FAR 107, but the FAA website did not allow him to register a newly purchased Phantom 4 Pro. The UAS was flown then subsequently registered as a commercial UAS.

## Time / Day

Date : 201708

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LGA.Airport

State Reference : NY

Altitude.MSL.Single Value : 2500

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Regional Jet 200 ER/LR (CRJ200)

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1475371

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

Miss Distance.Horizontal : 300

Miss Distance.Vertical : 200



When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Human Factors  
Primary Problem : Human Factors

## Narrative: 1

Approaching Twin Tanks on LGA Runway 31 visual. ATC advised us that aircraft in front of us saw a drone. As we flew across Twin Tanks I saw a spot coming towards us, but it was a mylar balloon. First Officer said she saw a drone to our right just above our altitude, size about 5 ft across. I did not see it. At DIALS at 2500 feet drone was about 2700 ft [and] a few hundred ft to the right of us.

## Synopsis

CRJ-200 Captain reported a NMAC with a UAV on approach to LGA in the vicinity of DIALS.

## Time / Day

Date : 201708

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : SYR.Tower

State Reference : NY

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : SYR

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Landing

Route In Use : None

## Aircraft : 2

Reference : Y

ATC / Advisory.Tower : SYR

Aircraft Operator : Military

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Training

Flight Phase : Taxi

Route In Use : None

## Person

Reference : 1

Location Of Person.Facility : SYR.Tower

Reporter Organization : Government

Function.Air Traffic Control : Local

Function.Air Traffic Control : Ground

Qualification.Air Traffic Control : Developmental

ASRS Report Number.Accession Number : 1474497

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Confusion

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : Flight Crew  
Analyst Callback : Completed

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Conflict : Ground Conflict, Less Severe  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Ground Incursion : Runway  
Detector.Person : Air Traffic Control  
When Detected : Taxi  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Company Policy  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

I was working the positions of Local and Ground combined. In the tower was another controller working Flight Data Clearance Delivery and he was the Tower CIC as well. There was a significant amount of flow programs being utilized which caused extra workload for the Flight Data position and for myself on the Ground control frequency. On tower frequency was 5 aircraft in the pattern with one of the aircraft being a drone remote piloted aircraft. This is not a normal operation at Syracuse Tower. The average amount of traffic in the pattern is 1 aircraft. Not only was there 5 aircraft in the pattern, but there were multiple air carrier arrivals into Syracuse as well as another drone.

In my opinion, for traffic that was on both the Ground and Local frequencies there needed to be an extra controller in the tower. Unfortunately, due to our staffing this was not an option. The actual event that took place involved Aircraft X who was in the VFR traffic Pattern. Aircraft X was instructed to follow the drone with its chase Aircraft. Aircraft X reported both aircraft in sight and was cleared for the option. Aircraft Y was observed landing while Aircraft X was on a 2 mile final. As Aircraft X touched down the drone was turning off of the runway. The drone drones have to taxi at a specific speed when they are on the taxiways and the runways. Their taxiing speed is significantly slower than any fixed wing aircraft. In my opinion, this was the leading contributor to the runway incursion.

I recommend that if there are more than 2 aircraft in the pattern and a drone, there needs to be a standalone CIC or decombine Local and Ground frequencies. An increase in staffing would have allowed for an extra "pair of eyes" for the operation. A standard strip marking procedure for pattern traffic would be helpful to provide a visual aid for increased controller workload. The drone should be taxiing at a much faster pace on the runways and they can slow their taxi speed on the taxiways. A procedure should be in place to address the runway compression that occurs whenever a drone lands i.e. approach separates an arrival further from the drone to make up for the times it takes to get the drone off of the runway

## Callback: 1

Reporter said the Military is taxiing Military UAV's at airport for training then during the time of this report they were flying them in the tower pattern. Reporter advised that the

military should be doing this somewhere else and not at SYR. Reporter stated the FAA is trying to figure out how to integrate the UAVs in a normal traffic pattern.

## Synopsis

SYR Tower Controller reported a runway incursion due to the MQ-9 UAV taxiing too slow and an arrival landing on the runway while the drone was still exiting.

## Time / Day

Date : 201708

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : MYF.Airport

State Reference : CA

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Light : Night

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Mission : Personal

Flight Phase : Cruise

Airspace.Class G : MYF

## Person

Reference : 1

Location Of Person : Gate / Ramp / Line

Reporter Organization : Personal

Qualification.Flight Crew : Private

ASRS Report Number.Accession Number : 1474478

## Events

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Flight Crew

When Detected.Other

Result.General : Police / Security Involved

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

There was a drone flying over parked aircraft at MYF airport. East of and directly over the FBO building. We witnessed 2 flights of the drone as we were securing our aircraft after completing our flight. The drone was reported to the police during its first flight, and then again when it came back during its second flight. Unknown if they located anyone connected to it.

Drone appeared to be about 150 feet above the ground at its highest, there was no

NOTAM regarding drone flight occurring at the airport. The drone made multiple passes in an east to west and back during its flights over parked aircraft. I was able to hear the motors of the drone during both of its flight. The drone flew over parked aircraft for about 5 minutes during each flight, while aircraft were actively landing at the airport and making radio position reports.

The drone had red and green lights allowing easy visibility against a black sky to see it turn and track it as it made its multiple passes over parked aircraft and then exited to the south appearing to land at an office building.

## Synopsis

Pilot tying down his aircraft reported sighting a drone flying over parked aircraft at MYF at night. No NOTAMs were in effect for these flights.

## Time / Day

Date : 201708  
Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : JFK.Airport  
State Reference : NY  
Altitude.MSL.Single Value : 4000

## Environment

Flight Conditions : VMC  
Light : Daylight

## Aircraft : 1

Reference : X  
ATC / Advisory.TRACON : N90  
Aircraft Operator : Air Carrier  
Make Model Name : Regional Jet 200 ER/LR (CRJ200)  
Crew Size.Number Of Crew : 2  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Initial Approach  
Route In Use : Visual Approach  
Airspace.Class B : NYC

## Aircraft : 2

Reference : Y  
Make Model Name : UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Phase : Cruise  
Airspace.Class B : NYC

## Person

Reference : 1  
Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
ASRS Report Number.Accession Number : 1473457  
Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Vertical : 150

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

We were being vectored for a visual 22L into JFK. Just after crossing the shore of Long Island at 4000 ft heading 040, speed 250 KIAS about 2-4 miles southwest of FRG airport, [the First Officer] and I were both heads up because of all the VFR traffic surrounding the airport. It was a beautiful day. That's when something caught my eye passing off the left side of the aircraft. It was only visible for about 3 seconds before it passed about 100-200 ft below us, but it was quite clearly a drone. It was white and shaped like a box. Looked like one of those phantom quadcopters or larger. The First Officer did not see it. I reported it to the Approach Controller and then called to give a more detailed report after we parked at the gate.

## Synopsis

CRJ-200 Captain reported a NMAC with a UAV on a visual approach to JFK Runway 22L.



## Time / Day

Date : 201708

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : JFK.Airport

State Reference : NY

Altitude.MSL.Single Value : 3000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.TRACON : N90

Aircraft Operator : Air Carrier

Make Model Name : Medium Large Transport, Low Wing, 2 Turbojet Eng

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Airspace.Class B : NYC

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class B : NYC

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1472399

Human Factors : Situational Awareness

## Events

Anomaly.Conflict : NMAC

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Contributing Factors / Situations : Procedure

Primary Problem : Procedure

## Narrative: 1

On departure from runway 31L at JFK we were informed by the Departure Controller of a drone sighting by the preceding aircraft. The Controller gave us a heading and advised us that the drone had been seen to the preceding aircraft's right at 3000 feet msl. We turned to the assigned heading (autopilot on, but yoke in hand, just in case), and were both scanning outside the aircraft. I spotted the drone just before we went abeam it, on our LEFT side, at 3000 (we were just above it in the climb, perhaps 50 feet higher). Our geographic location at the time was approximately 3/4 of a mile northeast of the former Coast Guard air station. We passed the drone without the need for evasive action. We immediately notified ATC, and I remembered to press the FDR (Flight Data Recorder) Event button to save the location data. I later (when time permitted) ACARSeD our dispatcher so as to make sure the FDR data would be preserved. It was a large drone, and appeared to have some kind of parachute/balloon attachment. Had we made contact it would have been very bad. The remainder of the flight was uneventful.

I would note that the turn given [to] us by ATC was entirely proper based on available data. The Controller had only one data point from the preceding aircraft to go by, and made a best guess as to the safest course of action. The Controller did give us ample warning to be aware, thus having us in the correct position to take evasive action had it been necessary. I was somewhat surprised that departures and arrivals continued. I would have suggested stopping them, and sending up a police helicopter to locate the drone and thus have a specific location before sending larger and fast passenger aircraft into the area.

## Synopsis

Air carrier Captain reported a close encounter with a UAV on climbout from JFK Runway 31L after being informed by Departure Control that the preceding aircraft had reported sighting a drone.

## Time / Day

Date : 201708

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : FSD.Airport

State Reference : SD

Relative Position.Angle.Radial : 360

Relative Position.Distance.Nautical Miles : 20

Altitude.MSL.Single Value : 27000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZMP

Aircraft Operator : Government

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Tactical

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZMP

## Person

Reference : 1

Location Of Person : Hangar / Base

Reporter Organization : Government

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 3000

Experience.Flight Crew.Last 90 Days : 22

Experience.Flight Crew.Type : 1500

ASRS Report Number.Accession Number : 1471822

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Analyst Callback : Completed

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : Clearance

Detector.Person : Flight Crew

Detector.Person : Air Traffic Control

When Detected : In-flight  
Result.Flight Crew : Returned To Clearance  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

Contributing Factors / Situations : Aircraft  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Human Factors

## Narrative: 1

I put the aircraft on a pre-programmed mission with altitude set to FL270 and airspeed set to 83 KIAS. The altitude was not properly propagated to one of the points on the mission and I missed that. Turning to point 3, the aircraft started descending from FL270 and went as low as FL254. Center called as I was doing a manual take over and climbed back to the assigned altitude fixed the mission and continued over the area of interest until a crew swap out 2 hours later.

The location was approximately 20 miles north of Sioux Falls, SD.

## Callback: 1

Reporter mentioned that there was an error in the program. FL200 was entered when it should have been FL270.

## Synopsis

UAV Operator reported misprogramming the UAV causing it to descend unintentionally.

## Time / Day

Date : 201708

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 4000

## Environment

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Government

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Training

Flight Phase : Initial Approach

Route In Use : None

Airspace.Class E : ZZZ

## Person

Reference : 1

Location Of Person.Facility : ZZZ.Tower

Reporter Organization : Government

Function.Air Traffic Control : Flight Data / Clearance Delivery

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 7

ASRS Report Number.Accession Number : 1471566

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Distraction

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : Flight Crew

Communication Breakdown.Party2 : ATC

Analyst Callback : Completed

## Events

Anomaly.Airspace Violation : All Types

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Procedural : Published Material / Policy

Anomaly.Deviation - Procedural : FAR

Detector.Person : Air Traffic Control

When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

## Narrative: 1

The military recently started flying MQ9 unmanned drones at ZZZ. We were directed by FAA HQ that if the MQ9 exited the Class D surface area we had to file a report. The MQ9 was instructed to go to hold so Local Control could get some departures out. I witnessed the MQ9 exit the class D surface area. I questioned the ATM (Air Traffic Manager) and the FLM (Frontline Manager) about filing a report and was pretty much told not to worry about it. As of right now, the FLM and ATM have not filed a report, which is in direct violation of what FAA HQ has told our facility.

I recommend that the military terminate the flying of MQ9's at ZZZ. Every time the military has a COA/LOA with us they violate them, and our management just "sweeps it under the rug." Flying the MQ9's at ZZZ puts an inherent risk on others using the national airspace system and to me as a pilot does not seem safe, especially with the amount of commercial traffic at ZZZ.

## Callback: 1

Reporter stated that the military signs the COAs and LOAs, but does not follow what is written. Management at the facility does not want any problems with the military, so the military basically does whatever they want. Reporter thinks this is very unsafe and the situation needs to be looked into.

## Synopsis

ZZZ Tower Controller reported a military UAV exited the Delta airspace against current agreements between the FAA and military.

## Time / Day

Date : 201707

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : EWR.Airport

State Reference : NJ

Altitude.MSL.Single Value : 15000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Center : ZNY

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : GPS

Nav In Use : FMS Or FMC

Flight Phase : Climb

Airspace.Class E : ZNY

## Aircraft : 2

Reference : Y

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Flight Phase : Cruise

Airspace.Class E : ZNY

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Type : 989

ASRS Report Number.Accession Number : 1470548

Human Factors : Distraction

## Events

Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Procedural : Published Material / Policy  
Anomaly.Deviation - Procedural : FAR  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related  
Contributing Factors / Situations : Human Factors  
Primary Problem : Environment - Non Weather Related

## Narrative: 1

I was the flying pilot departing EWR momentarily level at 15,000 before resuming our ATC climb past Colts Neck (COL) VOR when I saw a bright flash at my 2 o'clock position that caught my attention. I looked over towards the bright and highly reflective object. I tracked the path/trajectory and it appeared to be relatively level traveling opposite direction and below our flight path. It passed below and outside of the right engine nacelle about midway out from the length of the right wing. It was highly reflective and shimmering so I could not get a clear image of its relative size and shape. However, it appeared to be the size of a football with a fairly stable trajectory. I looked back towards the Captain and the jumpseater and said "did you see that?" The jumpseater said that he did and the Captain indicated that he did not. The jumpseater and I said it looked like or could be a drone. Our assumption. The best I could compare it to visually was a flare with its highly reflective appearance but a smooth (not random or wobbly) level flight path whizzing by us at a consistent speed. I could not see any identify features, such as rotors, paint color, or markings.

## Synopsis

B737 First Officer reported a shiny object passed very close to the right engine while level at 15000 ft during an EWR departure.



## Time / Day

Date : 201708

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : LRJ.Airport

State Reference : IA

Relative Position.Angle.Radial : 138

Relative Position.Distance.Nautical Miles : 9

Altitude.AGL.Single Value : 350

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft : 1

Reference : X

Make Model Name : Single Engine Turboprop Undifferentiated

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 137

Flight Plan : None

Mission : Agriculture

Flight Phase : Climb

Route In Use : Direct

Airspace.Class G : LRJ

## Aircraft : 2

Reference : Y

Aircraft Operator : Personal

Make Model Name : UAV - Unpiloted Aerial Vehicle

Operating Under FAR Part.Other

Mission : Personal

Flight Phase : Cruise

Airspace.Class G : LRJ

## Person

Reference : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Contracted Service

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 7900

Experience.Flight Crew.Last 90 Days : 150

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1470425

Human Factors : Confusion  
Human Factors : Distraction

## Events

Anomaly.Conflict : NMAC  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 50  
Miss Distance.Vertical : 20  
When Detected : In-flight

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related  
Primary Problem : Environment - Non Weather Related

## Narrative: 1

After completing an aerial application of a farm field approximately 10 miles southeast of LRJ airport, I was climbing out to the northwest to my typical ferrying altitude of 500 feet AGL to return to LRJ. One mile to the northwest of my target location while climbing, at 350 AGL I notice briefly a white object appear in my lower right corner of my windshield. I initially believed it to be a seagull as birds are rarely white this time of year, but when the object reappeared under the right wingtip of my aircraft I noticed it was in fact a white colored quad-copter type UAV. I estimate the UAV missed my right wingtip by approximately 50 ft horizontal and 20 ft below vertically. I had no time to take any evasive actions prior to noticing and passing the UAV. After discovering the object was in fact a UAV, I circled the field to observe the UAV was in a stationary hover approximately 350 AGL above a farm field. I then observed what I believed to be the operators of the UAV inside the cab of a pickup truck, located on a siding adjacent to the field facing to the west. I did not see any operators or observers located outside of the pickup. After 2 orbits of the field the UAV, began a descent to the road along the parameter of the field, and the truck drove to intercept it. I then continued my flight direct to LRJ with no further incidents.

## Synopsis

Agriculture aircraft pilot reported a near miss with a UAV approximately 10 miles southeast of LRJ.