ASRS Database Report Set

Unmanned Aerial Vehicle (UAV) Reports

Report Set Description.................................A sampling of reports involving Unmanned Aerial Vehicle (UAV) events.

Update Number............................................12

Date of Update.............................................August 31, 2018

Number of Records in Report Set.................50

Number of New Records in Report Set ..........47

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.
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.

Becky L. Hooey, 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
<table>
<thead>
<tr>
<th>ACN: 1549645 (1 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Helicopter pilot reported a NMAC with a quadcopter drone at approximately 650 feet MSL while inbound for landing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1549558 (2 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air carrier Captain reported a conflict with a UAV while on approach to MSP.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1548477 (3 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>B757 Captain reported a NMAC with a drone while flying the SID, at approximately 13,500 feet and 50 NM East of the SFO airport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1548254 (4 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>B737-800 pilot reported near miss with a drone while on initial approach at approximately 8,000 feet altitude.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1547930 (5 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>B737 Captain reported a near miss with a drone during climbout from EWR airport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1547742 (6 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Pilot reported having a NMAC with a drone and subsequently being distracted during the entry to traffic pattern at WVI.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1547732 (7 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Drone operator reported being informed by a local law enforcement officer that the State police had TFR in effect; however, the operator could not source any publication of the TFR from neither NOTAMs, nor a weather briefer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1546483 (8 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>CRJ-900 First Officer reported a NMAC with a drone about 200 feet while on approach to EWR airport.</td>
</tr>
<tr>
<td>ACN: 1545119 (9 of 50)</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>GA pilot reported a NMAC with a drone just outside the FAF while flying the RNAV15 approach to Indianapolis Metro Airport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1543051 (10 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>PC-12 Captain reported an NMAC with a Unmanned Aerial Vehicle (UAV) while on final approach to TEB airport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1542491 (11 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Flight instructor reported a NMAC with a drone as they were turning base leg.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ACN: 1542105 (12 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>A large unmanned aerial vehicle and a general aviation aircraft were approaching the same airport when the GA pilot reported a 'close-call' with the UAV. Tower and the operator of the UAV reported that they had both aircraft in sight and that separation had been 4000 feet horizontally and 500 feet vertically.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1540434 (13 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>A drone operator reported losing control of the drone after the unmanned aerial vehicle drifted too far out of range.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACN: 1539725 (14 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>C172 instructor reported sighting a drone while in the traffic pattern at IWA airport.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ACN: 1539234 (15 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>UAV operator reported inadvertently flying in Class D airspace after misinterpreting charts provided in a commercial &quot;App.&quot;</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>ACN: 1539088 (16 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air Carrier Captain reported a NMAC with a UAV on approach to SHV.</td>
</tr>
<tr>
<td>ACN: 1538555 <em>(17 of 50)</em></td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>C210 pilot reported ceasing photo operations in conjunction with a UAV when the Airport Manager complained.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ACN: 1538350 <em>(18 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air Carrier flight crew reported passing under a UAV while on the ILS Runway 13 at LGA.</td>
</tr>
</tbody>
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<tr>
<th>ACN: 1537943 <em>(19 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Light Transport Captain reported a NMAC with a drone at 7000 feet on departure in New York's airspace.</td>
</tr>
</tbody>
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<tr>
<th>ACN: 1537607 <em>(20 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>The pilot of an MQ9 Unmanned Aerial Vehicle (UAV) reported that, while conducting a tactical mission, he had to abandon his control station during a thunderstorm, leaving the drone without a pilot at the controls for approximately one hour.</td>
</tr>
</tbody>
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<tr>
<th>ACN: 1537522 <em>(21 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>Air carrier flight crew reported they had observed an Unmanned Aerial Vehicle (UAV) go by the aircraft at about 1000 feet, while conducting an approach at the Philadelphia International Airport (PHL).</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ACN: 1536555 <em>(22 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>The pilot of an Embraer 175 aircraft reported a very close encounter with an Unmanned Aerial Vehicle (UAV), while conducting an approach to SAN. Though no evasive action was required, the event was immediately reported to Air Traffic Control.</td>
</tr>
</tbody>
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<thead>
<tr>
<th>ACN: 1536448 <em>(23 of 50)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>The Captain of a Cessna Citation aircraft reported a close encounter with an Unmanned Aerial Vehicle (UAV) while on approach to ZSSS. Though no evasive maneuvering was required, the event was reported to Air Traffic Control authorities.</td>
</tr>
</tbody>
</table>
Synopsis
UAV operator reported conducting a flight within IAD Class B airspace because he misread the chart.

**ACN: 1533416 (25 of 50)**

Synopsis
King Air pilot reported a NMAC with a UAV while on final approach to TPA.

**ACN: 1532071 (26 of 50)**

Synopsis
Helicopter pilot reported a NMAC with a drone operating while traversing Patrick AFB's class D airspace.

**ACN: 1531479 (27 of 50)**

Synopsis
UAV Operator reported conducting a film shoot on an airport without obtaining proper approval from airport management.

**ACN: 1531194 (28 of 50)**

Synopsis
PA32 pilot reported a drone flew approximately 30 feet away in the departure corridor during the initial climb out.

**ACN: 1530897 (29 of 50)**

Synopsis
Unmanned Aerial Vehicle (UAV) operator reported that he was unsure whether he was in violation of FAR 107 while operating his drone due to ambiguity on the airspace charts.

**ACN: 1529932 (30 of 50)**

Synopsis
EMB-175 Captain reported the First Officer sighted a UAV 200 feet below the aircraft on final approach to Runway 25L at LAX.

**ACN: 1529633 (31 of 50)**

Synopsis
Captain, jumpseating on a B737, reported a close encounter with a small UAV on final approach which was not seen by the flying flight crew.

**ACN: 1529567 (32 of 50)**
Synopsis
A UAV Technician reported that the pitch controller was moved with the rig pin still installed.

ACN: 1528848 (33 of 50)

Synopsis
UAV Operator reported that an aircraft in the traffic pattern felt the UAV was "very close," but the aircraft was advised by Tower that there was "plenty of separation."

ACN: 1528336 (34 of 50)

Synopsis
A319 Captain reported a NMAC with an Unpiloted Aerial Vehicle on short final to ORD Runway 09L.

ACN: 1527986 (35 of 50)

Synopsis
UAV Operator reported thinking he was cleared via a waiver to operate within ONT airspace, but after the flight determined the waiver had never been obtained.

ACN: 1523750 (36 of 50)

Synopsis
B757 flight crew reported sighting a UAV on departure from SFO.

ACN: 1522263 (37 of 50)

Synopsis
A321 First Officer reported an inflight conflict with a UAV on short final into MCO.

ACN: 1522038 (38 of 50)

Synopsis
C172 pilot reported an airborne conflict with a UAV in the vicinity of MRY airport.

ACN: 1522031 (39 of 50)

Synopsis
C172 pilot reported a NMAC with a UAV on descent into CRQ airport.

ACN: 1521534 (40 of 50)

Synopsis
<table>
<thead>
<tr>
<th>ACN: 1521507 (41 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>A321 Captain reported a conflict with a drone near the outer marker of the approach to MCO airport.</td>
</tr>
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</table>

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<thead>
<tr>
<th>ACN: 1519589 (42 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>G450 Captain reported a NMAC with a UAV on approach to Runway 24R at LAX.</td>
</tr>
</tbody>
</table>

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<tr>
<th>ACN: 1518262 (43 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>A320 Captain reported a NMAC with a drone on departure from SFO.</td>
</tr>
</tbody>
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<thead>
<tr>
<th>ACN: 1516746 (44 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>MD-11 flight crew reported an Airborne Conflict with a drone during final approach for landing.</td>
</tr>
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<thead>
<tr>
<th>ACN: 1516305 (45 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>CRJ-700 Captain reported an airborne conflict with what was believed a UAV in the vicinity of DAY airport.</td>
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</table>

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<tr>
<th>ACN: 1516103 (46 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>PA28 flight instructor landing at O88 airport reported observing a RC aircraft apparently operating outside of the charted parameters associated with the RC operations area.</td>
</tr>
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<thead>
<tr>
<th>ACN: 1513565 (47 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>A319 flight crew reported a NMAC with a drone during their approach to LGA.</td>
</tr>
</tbody>
</table>

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<tr>
<th>ACN: 1505072 (48 of 50)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Synopsis</strong></td>
</tr>
<tr>
<td>UAV operator reported he was alerted by a private airport company security that he was operating too close to the private airport.</td>
</tr>
</tbody>
</table>
UAV Operator reported loss of aircraft control resulting in ground impact with some damage to the UAV.

**ACN: 1505053 (49 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 (50 of 50)**

**Synopsis**
A321 flight crew reported being distracted by reports of a drone on departure from LAX.
Report Narratives
Time / Day

Date : 201806
Local Time Of Day : 1201-1800

Place

Locale Reference.Airport : HIO.Airport
State Reference : OR
Relative Position.Angle.Radial : 068
Relative Position.Distance.Nautical Miles : 4
Altitude.MSL.Single Value : 650

Environment

Flight Conditions : VMC
Weather Elements / Visibility : Haze / Smoke
Weather Elements / Visibility.Visibility : 10
Light : Daylight
Ceiling.Single Value : 5000

Aircraft : 1

Reference : X
ATC / Advisory.Tower : HIO
Aircraft Operator : Personal
Make Model Name : Helicopter
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Passenger
Flight Phase : Initial Approach
Route In Use : Direct
Airspace.Class D : HIO

Aircraft : 2

Reference : Y
Make Model Name : UAV - Unpiloted Aerial Vehicle
Flight Phase : Cruise
Airspace.Class D : HIO

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 : Flight Instructor
Experience.Flight Crew.Total : 2219
Experience.Flight Crew.Last 90 Days : 131
Experience.Flight Crew.Type : 255
ASRS Report Number.Accession Number : 1549645

Events
Anomaly.Conflict : NMAC
Anomaly.Inflight Event / Encounter : Other / Unknown
Detector.Person : Flight Crew
Miss Distance.Horizontal : 100
Miss Distance.Vertical : 50
When Detected : In-flight
Result.Flight Crew : Took Evasive Action

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

Narrative: 1
After being cleared into Class Delta airspace for landing at HIO, and instructed to descend below 700 feet MSL, I had a near miss with a drone over highway 26, 4nm ENE of HIO. I was at approximately 650 feet MSL and the drone was above me, just to the right of my 12 o'clock. I turned left upon seeing it and got a good look at it. It appeared to be grey in color and possibly of the DJI Phantom type of quadcopter. I have seen plenty of these and it looked to be that style. I immediately reported to the Tower that I had a near miss at the edge of their airspace and gave them approximate location, altitude, and description of the UAV. I was traveling approximately 120 KTS IAS, with light winds and good visibility other than light smoke in the area from prescribed burns. I had two passengers on board, one in the front with me and one directly behind that passenger.

Synopsis
Helicopter pilot reported a NMAC with a quadcopter drone at approximately 650 feet MSL while inbound for landing.
ACN: 1549558 (2 of 50)

**Time / Day**
- Date: 201806
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference.Airport: MSP.Airport
- State Reference: MN
- Altitude.MSL.Single Value: 4000

**Environment**
- Flight Conditions: VMC
- Light: Night

**Aircraft: 1**
- Reference: X
- ATC / Advisory.TRACON: M98
- 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
- Nav In Use: FMS Or FMC
- Flight Phase: Initial Approach
- Airspace.Class B: MSP

**Aircraft: 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace.Class B: MSP

**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)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 1549558

**Events**
- Anomaly.Conflict: Airborne Conflict
- Detector.Person: Flight Crew
Miss Distance.Horizontal : 200
Miss Distance.Vertical : 500
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
While on final into MSP on runway 12R, my first officer noticed an object to the left of our aircraft. We were descending through 4,000 feet and the object looked to be around 3,500 feet and approximately 200 feet off our left side it looked to be black and silver in color and approximately 3 feet tall. It looked to be maintaining level flight and possibly moving opposite our direction of flight. ATC was notified and we continued into MSP and had a normal landing.

Synopsis
Air carrier Captain reported a conflict with a UAV while on approach to MSP.
**Time / Day**

Date: 201806
Local Time Of Day: 0601-1200

**Place**

Locale Reference: Airport: SFO.Airport
State Reference: CA
Altitude.MSL.Single Value: 13500

**Environment**

Flight Conditions: VMC
Light: Daylight

**Aircraft : 1**

Reference: X
ATC / Advisory: TRACON: NCT
Aircraft Operator: Air Carrier
Make Model Name: B757 Undifferentiated or Other Model
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 121
Flight Plan: IFR
Nav In Use: GPS
Nav In Use: FMS Or FMC
Flight Phase: Climb
Route In Use.SID: SNTNA 2
Airspace.Class E: NCT

**Aircraft : 2**

Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Flight Phase: Cruise
Airspace.Class E: NCT

**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)
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Multiengine
Experience.Flight Crew.Type: 1158
ASRS Report Number.Accession Number: 1548477

**Events**
Anomaly.Conflict : NMAC
Anomaly.Inflight Event / Encounter : Other / Unknown
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 : Ambiguous

Narrative: 1
During climbout, on the SNTNA 2 departure, at approximately 13,500 feet, a drone passed down the right side of the aircraft. The coordinates of the encounter were N3754.0/W12207.9. We reported the encounter to ATC. Only the first officer saw the drone. Though difficult to judge the exact distance, he estimated that we came within 200 feet of the drone. We were close enough to it that he was able to clearly see that it was red.

Synopsis
B757 Captain reported a NMAC with a drone while flying the SID, at approximately 13,500 feet and 50 NM East of the SFO airport.
**ACN: 1548254 (4 of 50)**

**Time / Day**
- Date: 201806
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: DFW.Airport
- State Reference: TX
- Altitude.MSL.Single Value: 8000

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory.TRACON: D10
- Aircraft Operator: Air Carrier
- Make Model Name: B737-800
- 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: Descent
- Route In Use.STAR: VKTRY 2 RNAV
- Airspace.Class B: DFW

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Flight Phase: Cruise
- Airspace.Class B: DFW

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Pilot Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 1548254

**Events**
- Anomaly.Conflict: NMAC
- Detector.Person: Flight Crew
Miss Distance.Horizontal : 50
Miss Distance.Vertical : 2
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
Visual conditions on VKTRY2 RNAV arrival. Was cleared direct to YOHAN for ILS 18R and then cleared direct to LEGRE (estimating 15NM from LEGRE and 230 knots), still descending to 3,000 feet. Once established direct LEGRE and descending through 8,000-8,200 feet, [I] saw what I initially thought was a bird on the nose, slightly crossing center to left. As object passed, it was clear it was a quad copter drone. Happened fast but thought it was grey bottom and black top. Passed approximately 50-100 feet off the left wing and slightly (25 inches) high. Made report immediately with Approach Control as it happened. Was asked if I was submitting a "Near Midair Report" prior to switching tower and I replied yes.

Synopsis
B737-800 pilot reported near miss with a drone while on initial approach at approximately 8,000 feet altitude.
**Time / Day**

Date: 201806
Local Time Of Day: 1801-2400

**Place**

Locale Reference.
Airport: EWR.Airport
State Reference: NJ
Relative Position.
Angle.Radial: 045
Relative Position.
Distance.
Nautical Miles: 3
Altitude.
MSL.
Single Value: 3300

**Environment**

Flight Conditions: VMC
Light: Daylight

**Aircraft: 1**

Reference: X
ATC / Advisory.
TRACON: N90
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
Flight Phase: Climb
Airspace.
Class B: EWR

**Aircraft: 2**

Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Flight Phase: Cruise
Airspace.
Class B: EWR

**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: Instrument
Qualification.
Flight Crew: Air Transport Pilot (ATP)
Qualification.
Flight Crew: Multiengine
Experience.
Flight Crew.
Total: 8621
Experience.
Flight Crew.
Last 90 Days: 220
ASRS Report Number.
Accession Number: 1547930
Human Factors: Situational Awareness
Events
Anomaly.Conflict : NMAC
Detector.Person : Flight Crew
Miss Distance.Horizontal : 50
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
Just after takeoff EWR, climbing through 3,300, on New York departure, we passed a white and red or white and orange drone, within 50 feet of our right wingtip. In the couple of seconds, it first appeared as a Mylar balloon, but as it passed our wingtip, it was definitely a drone.

Synopsis
B737 Captain reported a near miss with a drone during climbout from EWR airport.
**Time / Day**
Date: 201805  
Local Time Of Day: 1201-1800

**Place**
Locale Reference.Airport: WVI.Airport  
State Reference: CA  
Relative Position.Distance.Nautical Miles: 10  
Altitude.MSL.Single Value: 4500

**Environment**
Flight Conditions: VMC  
Weather Elements.Visibility: Visibility: 20  
Light: Daylight  
Ceiling.Single Value: 12000

**Aircraft : 1**
Reference: X  
ATC / Advisory.TRACON: NCT  
Aircraft Operator: Personal  
Make Model Name: Small Aircraft  
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: NCT

**Aircraft : 2**
Reference: Y  
Make Model Name: UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part: Other  
Flight Phase: Cruise  
Airspace.Class E: NCT

**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  
Experience.Flight Crew.Total: 2500  
Experience.Flight Crew.Last 90 Days: 25
Experience.Flight Crew.Type : 1500
ASRS Report Number.Accession Number : 1547742

Events
Anomaly.Conflict : NMAC
Detector.Person : Flight Crew
Miss Distance.Horizontal : 50
Miss Distance.Vertical : 100
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
While flying to WVI and still talking to NorCal after exiting SFO Class B, a silver drone passed about 50 feet left of my plane and about 100 feet below. I was at 4,500 feet on a heading of about 140. I reported the incident to the NorCal Controller who then asked a series of questions with lots of interruptions to talk to other traffic. He was still getting information from me when I entered the pattern at WVI. There was considerable traffic at WVI including parachute jumpers and a Meridian with minimum fuel. I didn't switch to the WVI UNICOM until after I had entered a right downwind for Runway 20 because I was still providing drone information to the controller. I mistakenly entered a right downwind instead of a standard left downwind pattern. It didn't create any conflicts, but was not correct. I should have stayed at cruising altitude and completed my involvement with the controller before entering the pattern. I allowed myself to be very distracted and was way behind the plane. The illegal drone and near miss was the primary contributing factor. There has to be a way to control the drone operators.

Synopsis
Pilot reported having a NMAC with a drone and subsequently being distracted during the entry to traffic pattern at WVI.
ACN: 1547732 (7 of 50)

**Time / Day**
Date: 201806
Local Time Of Day: 1201-1800

**Place**
Locale Reference.Airport: ROC.Airport
State Reference: NY
Relative Position.Distance.Nautical Miles: 10
Altitude.AGL.Single Value: 123

**Environment**
Flight Conditions: VMC
Light: Daylight

**Aircraft**
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
Airspace.Class E: ROC

**Person**
Reference: 1
Location Of Person: Hangar / Base
Reporter Organization: Personal
Function.Other.Other
Qualification.Flight Crew: Private
Experience.Flight Crew.Total: 270
Experience.Flight Crew.Last 90 Days: 20
Experience.Flight Crew.Type: 60
ASRS Report Number.Accession Number: 1547732
Human Factors: Confusion
Analyst Callback: Completed

**Events**
Anomaly.Airspace Violation: All Types
Anomaly.Deviation - Procedural: Published Material / Policy
Detector.Person: Other Person
When Detected: In-flight
Result.General: Police / Security Involved

**Assessments**
Contributing Factors / Situations: Human Factors
Contributing Factors / Situations: Procedure
Contributing Factors / Situations: Airspace Structure
Primary Problem: Ambiguous

**Narrative: 1**

I was near [an] event. I was more than 100 feet away from any person(s) in an isolated area, west of the main street, by railroad tracks, for my 3rd flight of the day, when the local Law Enforcement Officer (LEO) approached me and said the State Police had a TFR over the area. The UAS was directly overhead of me. I had an operating aviation band radio tuned to ROC Tower. I landed immediately and curtailed by flight activities.

My two previous flights in the nearby area were at least that distance away from people, both in isolated areas for takeoff and landing. I immediately re-verified that there was no TFR by, A: Airmap.IO app on my phone, B: FAA TFR website and, C: calling 1800-WXBRIEF and talking to a Briefer. I had previously checked for TFRs on the tfr.faa.gov site. I eventually found and talked to a State Police LEO at the [event] and he didn't know of any TFR. He said there may be a State Police Drone around that might be used, if needed. He gave me a phone number of the (local) State Police office. I contacted them. They needed time to look into it. While waiting, I approached two other local LEOs and informed them of what the original LEO said. They didn't know of any TFR. They did mention that they knew of the State Police Drone and that if it was used, it launched on an upper floor of a nearby office building. They contacted their superior and while on the phone with him, they learned of my contact with the local State Police office. They were unable to resolve this.

A bit later, I received a call back from the State Police office. I was told that there was a State Police drone on location, and if flown was operated by a State Police officer. I was told that they had contacted the NE FAA (?) regional office. I was told that he said because the State Police had a drone in this area (not withstanding it was not airborne), that I could not fly within 5 miles, due to something called like, the "FAA Drone Safety act" (?), which I cannot find any reference to. That if I were flying my drone and then they wanted to fly, I would be interfering with them. Something about they (State Police) owning the sky. I was also told that if they saw me flying near there, during the [event] time, they would only take my information and turn it over to the FAA. I have checked the 1800wxbrief.com, UAS operating map for the area and there is no UAS NOTAM filed by the State Police, only the usual ones that, I presume, by the Syracuse area military of over 60NM radius. There aren't any local (county, city, village) drone laws for the area that I know of.

To conclude, I don't know what law they are referring to about interfering with LEOs and what right LEOs have over Part 107 operators when the LEO UAV is not airborne and the LEO haven't even filed a NOTAM for a scheduled event. I am well aware of the FAA's position of not interfering with an active LEO operation. I do not believe one was active at the time. It took me quite a while to track down the State Police LEO on scene. However, I am filing this NASA report, just in case.

**Callback: 1**

Reporter had no further information to add. No subsequent contact with local FAA officials. Analyst suggested he consider using the FAA Hotline for further promulgation of this issue/event.

**Synopsis**
Drone operator reported being informed by a local law enforcement officer that the State police had TFR in effect; however, the operator could not source any publication of the TFR from neither NOTAMs, nor a weather briefer.
ACN: 1546483 (8 of 50)

**Time / Day**
- Date: 201805
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: EWR.Airport
- State Reference: NY
- Altitude.MSL.Single Value: 5000

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory.TRACON: N90
- 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
- Nav In Use: FMS Or FMC
- Flight Phase: Descent
- Route In Use: Vectors
- Airspace.Class B: NYC

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Airspace.Class B: NYC

**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)
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Multiengine
- ASRS Report Number.Accession Number: 1546483

**Events**
- Anomaly.Conflict: NMAC
- Detector.Person: Flight Crew
- Miss Distance.Vertical: 200
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 : Human Factors  
Contributing Factors / Situations : Procedure  
Primary Problem : Ambiguous

Narrative: 1

While on vectors for arrival at EWR, we were at 5,000 feet. I was functioning as Pilot Flying (PF) at the time. I was dividing my attention between the instruments and outside and something caught my eye ahead, above and to the right of our course. Initially what I was seeing was confusing, but I put my hands on the control wheel and the autopilot disconnect. As we got closer, I realized I was seeing a DGI-style drone. It was charcoal, a quad-copter with the standard green and red lights. It was 100 to 200 feet above us, hovering, apparently stationary. That would have put it at an altitude of 5,100-5,200 feet. Immediately after passing the drone, I made a radio transmission asking New York Approach to mark our location, [and] that we had passed close to a drone approximately a mile behind us.

I could not find any documentation on what actions a crew should take after a drone sighting like this one. We should have some guidance in our documentation for crews who encounter a drone. I suggest that we have a way to report these to help the FAA collect data on these sightings. A recurring sighting in a location like this one, approaching EWR, might help prevent a disaster. In this event, a drone was only a couple hundred feet from a transport aircraft. It seems that it is only a matter of time before an impact with a windshield or engine inlet. Crews need to be prepared to take evasive action if the drone is on a collision path with the aircraft. This demonstrates the need for vigilance in visual scan when possible, and highlights the need to avoid being complacent and relying on TCAS.

Synopsis

CRJ-900 First Officer reported a NMAC with a drone about 200 feet while on approach to EWR airport.
ACN: 1545119 (9 of 50)

Time / Day
Date: 201805
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: UMP.Airport
State Reference: IN
Relative Position.Distance.Nautical Miles: 10
Altitude.MSL.Single Value: 2400

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

Aircraft: 1
Reference: X
ATC / Advisory.Center: ZID
Aircraft Operator: Personal
Make Model Name: Bonanza 35
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Personal
Nav In Use: GPS
Flight Phase: Initial Approach
Route In Use: Visual Approach
Airspace.Class E: ZID

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part: Other
Flight Phase: Cruise
Airspace.Class E: ZID

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
Experience.Flight Crew.Total: 1267
Experience.Flight Crew.Last 90 Days: 10
Experience.Flight Crew.Type: 1000
ASRS Report Number.Accession Number: 1545119
Events
Anomaly.Conflict : NMAC
Anomaly.Inflight Event / Encounter : Other / Unknown
Detector.Person : Flight Crew
Miss Distance.Horizontal : 200
Miss Distance.Vertical : 0
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
We were on the RNAV 15 Approach to UMP coming up on AYUDA IAF and saw a flying object pass off our left wing tip at our altitude, 2400 feet MSL approximately 200 feet away.

Synopsis
GA pilot reported a NMAC with a drone just outside the FAF while flying the RNAV15 approach to Indianapolis Metro Airport.
ACN: 1543051 (10 of 50)

**Time / Day**
- Date: 201805
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference Airport: TEB.Airport
- State Reference: NJ
- Relative Position Angle Radial: 190
- Relative Position Distance Nautical Miles: 2
- Altitude AGL Single Value: 900

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory Tower: TEB
- Aircraft Operator: Air Taxi
- Make Model Name: PC-12
- Crew Size Number Of Crew: 2
- Operating Under FAR Part: Part 135
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use Localizer/Glideslope/ILS: Runway 19
- Flight Phase: Final Approach
- Airspace Class D: TEB

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace Class D: TEB

**Person**
- Reference: 1
- Location Of Person Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Taxi
- Function Flight Crew: Pilot Flying
- Function Flight Crew: Captain
- Qualification Flight Crew: Air Transport Pilot (ATP)
- Qualification Flight Crew: Instrument
- ASRS Report Number Accession Number: 1543051
- Human Factors: Distraction

**Events**
Anomaly.Conflict : NMAC
Anomaly.Deviation - Procedural : FAR
Anomaly.Inflight Event / Encounter : Other / Unknown
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : Police / Security Involved
Result.Flight Crew : Requested ATC Assistance / Clarification

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

Narrative: 1
While on final approach to landing at Teterboro (TEB) on the ILS 19 at approximately the 1.5-2 DME and about 900 feet, we detected a drone like object flying directly underneath us. The drone was about 100-200 feet below us heading in the opposite direction of our flight path. No evasive action was taken, as it was not on a collision course.

We notified Tower while we were still on approach to landing. We called tower once we landed on cell phone to give them all the details they needed so law enforcement could begin their investigation.

Synopsis
PC-12 Captain reported an NMAC with a Unmanned Aerial Vehicle (UAV) while on final approach to TEB airport.
**ACN: 1542491 (11 of 50)**

**Time / Day**
- Date: 201805
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: CAK.Airport
- State Reference: OH
- Relative Position: Angle: Radial: 150
- Relative Position: Distance: Nautical Miles: 8
- Altitude: MSL: Single Value: 3000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility: Visibility: 10
- Light: Daylight
- Ceiling: Single Value: 12000

**Aircraft : 1**
- Reference: X
- ATC / Advisory: Tower: CAK
- 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
- Nav In Use: Localizer/Glideslope/ILS: Runway 01
- Flight Phase: Initial Approach
- Route In Use: Vectors
- Airspace: Class C: CAK

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace: Class C: CAK

**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: 530
Experience Flight Crew Last 90 Days: 50
Experience Flight Crew Type: 75
ASRS Report Number Accession Number: 1542491
Human Factors: Distraction

**Events**

- Anomaly Conflict: NMAC
- Anomaly Inflight Event / Encounter: Other / Unknown
- Detector Automation: Air Traffic Control
- Detector Person: Flight Crew
- Miss Distance Horizontal: 500
- Miss Distance Vertical: 200
- 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: Human Factors
- Primary Problem: Human Factors

**Narrative: 1**

While on a base leg for the ILS 1 at CAK, I noticed a blue drone off the left side of my wing. We were at 3,000 MSL and the drone appeared to be at approximately 3,200 MSL. I notified ATC immediately and even they found it as a primary target on their radar. That being said, this drone was within Class C airspace. No damage or injuries. This is a one time event that may become a more frequent event with drone popularity increasing.

**Synopsis**

Flight instructor reported a NMAC with a drone as they were turning base leg.
ACN: 1542105 (12 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: ZZZ.Airport
- State Reference: US
- Altitude.AGL.Single Value: 1000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility
  - Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 20000

**Aircraft : 1**
- Reference: X
- ATC / Advisory.Tower: ZZZ
- Aircraft Operator: Government
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Part 91
- Flight Plan: None
- Mission: Training
- Flight Phase: Landing
- Route In Use: None

**Aircraft : 2**
- Reference: Y
- Make Model Name: Any Unknown or Unlisted Aircraft Manufacturer
- Operating Under FAR Part: Part 91

**Person**
- Reference: 1
- Location Of Person: Gate / Ramp / Line
- Reporter Organization: Government
- Function.Flight Crew: Pilot Flying
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Flight Instructor
- Qualification.Flight Crew: Multiengine
- Experience.Flight Crew.Total: 17000
- Experience.Flight Crew.Last 90 Days: 75
- Experience.Flight Crew.Type: 75
- ASRS Report Number.Accession Number: 1542105
- Human Factors: Other / Unknown

**Events**
Anomaly.Conflict : Airborne Conflict
Anomaly.Inflight Event / Encounter : Other / Unknown
Detector.Person : Air Traffic Control
Miss Distance.Horizontal : 4000
Miss Distance.Vertical : 500
When Detected : In-flight
Result.Air Traffic Control : Provided Assistance

**Assessments**

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

**Narrative: 1**

We were flying a 650-pound UAS in right closed traffic. On downwind, we were cleared for the option. A GA aircraft reported VFR 5 miles east inbound and was cleared for right base entry to runway 29. He was told of our position of right downwind to runway 25. Our UAS flies at approx. 60 KIAS. The PIC of the UAS elected to remain at pattern altitude and not descend when he heard the incoming traffic. Tower advised us of the position of the inbound aircraft, and our Visual Observer had him in sight and relayed that information to us in the ground control station. We were on mid-right base at 2500’msl/1000’agl when the inbound aircraft passed in front of us at our 2 o’clock position approx. 4000’ away and 500’ below us. Tower had us both in sight, our visual observer had both aircraft in sight. The pilot of the GA aircraft reported a close call. Tower assured the GA that there was adequate separation. The GA pilot came pretty close to arguing with the tower about it. There was obvious animosity from the GA pilot towards UAS in general. The pilot of the GA aircraft flew his pattern entry directly to the numbers of runway 29 and put him in the vicinity of what would have been our base to final turn. Regardless of the type of aircraft in the right landing pattern of 25, the GA pilot put himself in a position for conflict by flying directly to the numbers instead of a normal pattern. In the end, the GA pilot filed a NMAC with the FSDO. We cooperated fully with the FAA and supplied the real time data of the reported NMAC. I write this as a reminder to be alert and stick to normal practices. Be aware when entering the pattern when other planes are in different landing patterns. Had we not elected to remain at pattern altitude, the two aircraft would had little or no vertical separation between them.

**Synopsis**

A large unmanned aerial vehicle and a general aviation aircraft were approaching the same airport when the GA pilot reported a 'close-call' with the UAV. Tower and the operator of the UAV reported that they had both aircraft in sight and that separation had been 4000 feet horizontally and 500 feet vertically.
**ACN: 1540434 (13 of 50)**

**Time / Day**
Date: 201805

**Place**
Locale Reference.Airport: LWC.Airport
State Reference: KS
Relative Position.Distance.Nautical Miles: 4
Altitude.AGL.Single Value: 50

**Environment**
Flight Conditions: VMC
Weather Elements / Visibility. Visibility: 10
Light: Dawn
Ceiling: CLR

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

**Component**
Aircraft Component: Flight Dynamics Navigation and Safety
Aircraft Reference: X

**Person**
Reference: 1
Location Of Person: Hangar / Base
Reporter Organization: Personal
Function.Flight Crew: Pilot Flying
ASRS Report Number. Accession Number: 1540434
Human Factors: Human-Machine Interface
Human Factors: Situational Awareness

**Events**
Anomaly.Aircraft Equipment Problem: Critical
Anomaly.Deviation - Procedural: Published Material / Policy
Anomaly.Inflight Event / Encounter: Object
Anomaly.Inflight Event / Encounter: Loss Of Aircraft Control
Detector.Person: Other Person
When Detected: In-flight
Result.General: None Reported / Taken

**Assessments**
Contributing Factors / Situations : Aircraft
Primary Problem : Aircraft

**Narrative: 1**


**Synopsis**

A drone operator reported losing control of the drone after the unmanned aerial vehicle drifted too far out of range.
Time / Day
Date : 201805
Local Time Of Day : 0601-1200

Place
Locale Reference.Airport : IWA.Airport
State Reference : AZ
Altitude.MSL.Single Value : 2600

Environment
Flight Conditions : VMC
Weather Elements / Visibility. Visibility : 15
Light : Daylight

Aircraft : 1
Reference : X
ATC / Advisory.Tower : IWA
Aircraft Operator : FBO
Make Model Name : Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew : 1
Operating Under FAR Part : Part 91
Flight Plan : None
Mission : Training
Flight Phase : Initial Approach
Airspace.Class D : IWA

Aircraft : 2
Reference : Y
Make Model Name : UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part.Other
Flight Phase : Cruise
Airspace.Class D : IWA

Person
Reference : 1
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : FBO
Function.Flight Crew : Instructor
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Commercial
Qualification.Flight Crew : Flight Instructor
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 560
Experience.Flight Crew.Last 90 Days : 101
Experience.Flight Crew.Type : 215
ASRS Report Number.Accession Number : 1539725
Human Factors : Situational Awareness
Events
Anomaly.Conflict : NMAC
Anomaly.Inflight Event / Encounter : Object
Detector.Person : Flight Crew
Miss Distance.Horizontal : 200
Miss Distance.Vertical : 100
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
I was with a student pilot and we were practicing full stop taxi-back landings at IWA. We were established about one mile west of the airport in left downwind for runway 30 Left. Once approximately midfield, the Local controller gave us instructions to make a right 360 in the downwind for sequencing with other traffic ahead. My student then read back the instructions and established us in a standard rate turn to the right. Both my student, who was pilot flying in the left seat and myself were looking outside for traffic when about 270 degrees into the right turn we both noticed a small object below the right wing at approximately our 2-O'clock position moving left to right.

Initially I thought it was a small helicopter at a lower altitude but shortly after I observed a very bright flashing blue light atop a small black aircraft. Due to the size of the aircraft and the bright blue light on top, I concluded that it was a remote controlled drone. After my student and I both saw this object, he continued his rollout to re-establish himself in the downwind for runway 30 left. The object appeared to be hovering in very close proximity to us in the traffic pattern at an altitude that would have easily risked a collision for local traffic pattern operations. We luckily did not have to take evasive action judging by the drone’s slightly lower altitude but initially it very much caught us off guard. I reported the sighting immediately to the local controller and estimated to him that the object was about 300 feet below us.

Following the flight and subsequent debrief both my student and I concluded that the object was very easy to see and that it could not have been more than 100 feet lower than our downwind altitude of 2600 feet MSL. After this incident, the flight continued without any more issue. After our flight concluded, another student at our flight school told me he also saw the object around the same time we reported our sighting to the control tower. I am unsure if he has filed a report or what his position was at that time.

I'm really not sure what could have been done to avoid this specific incident except to make the public more aware of flying drones in close proximity to airports, traffic patterns, and approach corridors as well as develop regulations for drone pilots regarding proximity of their flight operations near airports.

Synopsis
C172 instructor reported sighting a drone while in the traffic pattern at IWA airport.
**ACN: 1539234** (15 of 50)

**Time / Day**
- Date: 201804
- Local Time Of Day: 0601-1200

**Place**
- Altitude.AGL.Single Value: 300

**Environment**
- 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

**Person**
- Reference: 1
- Location Of Person: Hangar / Base
- Reporter Organization: Corporate
- Function.Other.Other
- ASRS Report Number.Accession Number: 1539234
- Human Factors: Situational Awareness

**Events**
- Anomaly.Airspace Violation: All Types
- Anomaly.Deviation - Procedural: Published Material / Policy
- Anomaly.Deviation - Procedural: FAR
- Detector.Person: Other Person
- Were Passengers Involved In Event: N
- When Detected: Routine Inspection
- Result.General: None Reported / Taken

**Assessments**
- Contributing Factors / Situations: Chart Or Publication
- Contributing Factors / Situations: Human Factors
- Contributing Factors / Situations: Procedure
- Primary Problem: Procedure

**Narrative: 1**
Might have inadvertently flown drone within Class D airspace after misinterpreting flight charts in [commercial] App. Have since been advised to use FAA charts in conjunction with company maps. Flew drone 300 feet or less AGL to take photos on company property. Total flight time was less than five minutes.

**Synopsis**
UAV operator reported inadvertently flying in Class D airspace after misinterpreting charts provided in a commercial "App."
ACN: 1539088 (16 of 50)

**Time / Day**
- Date: 201804
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: SHV.Airport
- State Reference: LA
- Altitude.MSL.Single Value: 3000

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory.TRACON: SHV
- Aircraft Operator: Air Carrier
- Make Model Name: Challenger 650
- Crew Size.Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Phase: Initial Approach
- Airspace.Class C: SHV

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle

**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: 1539088

**Events**
- Anomaly.Conflict: NMAC
- Anomaly.Inflight Event / Encounter: Object
- Detector.Person: Flight Crew
- Miss Distance.Horizontal: 10
- Miss Distance.Vertical: 10
- Were Passengers Involved In Event: Y
- When Detected: In-flight
- Result.General: None Reported / Taken

**Assessments**
Contributing Factors / Situations : Procedure  
Primary Problem : Procedure

**Narrative: 1**

Unmanned drone passed no more than 10 feet below and 10 outside the right wing while being vectored for approach to SHV. Heading 170 degrees at 3000 feet. Captain saw it flash by the window on the right side. First Officer got a better look and described it as a prop-type drone, orange and white with a black top. Drone also observed and alarmed a passenger. Passenger also described drone as orange and white.

**Synopsis**

Air Carrier Captain reported a NMAC with a UAV on approach to SHV.
ACN: 1538555  (17 of 50)

Time / Day
Date: 201803
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft: 1
Reference: X
Aircraft Operator: Personal
Make Model Name: Cessna 210 Centurion / Turbo Centurion 210C, 210D
Crew Size: Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: None
Airspace.Class G: ZZZ

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Mission: Photo Shoot
Airspace.Class G: T67

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Personal
Function.Flight Crew: Single Pilot
Function.Flight Crew: Pilot Flying
Qualification.Flight Crew: Private
Experience.Flight Crew.Total: 450
ASRS Report Number.Accession Number: 1538555
Human Factors: Situational Awareness

Events
Anomaly.Deviation - Procedural: Published Material / Policy
Anomaly.Deviation - Procedural: FAR
Detector.Person: Flight Crew
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**

I was the pilot of the fixed wing. I asked a drone operator and spotter to get some beauty shots of the plane. I just found out the operator of the drone is not 107. I also believed [the] airport to be class G but maybe it's class E? There were no other airplanes in the pattern. There were no incidents or close calls. Airport Manager complained and we stopped the operation. I (pilot) was in two-way communication with the drone pilot the entire time and we extensively pre-briefed, with the plan to shut down if another plane entered the pattern.

**Synopsis**

C210 pilot reported ceasing photo operations in conjunction with a UAV when the Airport Manager complained.
**Time / Day**
Date: 201804
Local Time Of Day: 0601-1200

**Place**
Locale Reference.Airport: LGA.Airport
State Reference: NY
Altitude.MSL.Single Value: 1200

**Environment**
Flight Conditions: Marginal
Light: Daylight

**Aircraft: 1**
Reference: X
ATC / Advisory.Tower: LGA
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
Nav In Use.Localizer/Glideslope/ILS: Runway 13
Flight Phase: Initial Approach
Airspace.Class B: NYC

**Aircraft: 2**
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
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: First Officer
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1538350
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: Captain
Function: Flight Crew : Pilot Flying
Qualification: Flight Crew : Air Transport Pilot (ATP)
ASRS Report Number: Accession Number : 1538489
Human Factors : Situational Awareness

Events
Anomaly: Inflight Event / Encounter : Object
Detector: Person : Flight Crew
Were Passengers Involved In Event : N
When Detected : In-flight
Result: General : None Reported / Taken

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

Narrative: 1
On LOC and GS for ILS RWY 13 at LGA, as the PM. Fully configured, at final approach speed (135-140 kias) and approximately 1200 feet MSL, I noticed an object at 11:30 high in the windscreen. The object appeared to be triangular in shape, red and black color, and had the capability to turn itself. As we were descending on the LOC, the object appeared to be climbing and turning left, directly above our flight path, on a diverting course. As we neared, I believed it to be fixed wing drone, with a delta wing shape, but unsure of propulsion method (forward vs aft motor). Notified LGA Tower that a drone was on final at 1400 feet.

Narrative: 2
At about 1200 ft indicated, observed a small object floating around 1400 ft msl. We passed under it on the approach. I don't think we could see it until it was around an 1/8th of a mile away. It was sitting near the top of a fog layer which was restricting visibility.

Synopsis
Air Carrier flight crew reported passing under a UAV while on the ILS Runway 13 at LGA.
**ACN: 1537943 (19 of 50)**

**Time / Day**
- Date: 201704
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference: Airport: JFK.Airport
- State Reference: NY
- Altitude: MSL. Single Value: 7000

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility: Visibility: 30
- Ceiling: Single Value: 7500

**Aircraft: 1**
- Reference: X
- ATC / Advisory Center: ZNY
- Aircraft Operator: Personal
- Make Model Name: Light Transport, Low Wing, 2 Turbojet Eng
- Crew Size: Number Of Crew: 1
- Operating Under FAR Part: Part 135
- Flight Plan: IFR
- Mission: Passenger
- Nav In Use: FMS Or FMC
- Flight Phase: Cruise
- Route In Use: Vectors
- Airspace: Class B: ZNY

**Aircraft: 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace: Class B: ZNY

**Person**
- Reference: 1
- Location Of Person: Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Personal
- Function: Flight Crew: Captain
- Function: Flight Crew: Pilot Flying
- Qualification: Flight Crew: Instrument
- Qualification: Flight Crew: Air Transport Pilot (ATP)
- Qualification: Flight Crew: Multiengine
- Experience: Flight Crew: Total: 4055
- Experience: Flight Crew: Last 90 Days: 160
- Experience: Flight Crew: Type: 2100
- ASRS Report Number: Accession Number: 1537943
Events
Anomaly.Conflict : NMAC
Anomaly.Inflight Event / Encounter : Object
Detector.Person : Flight Crew
Miss Distance.Horizontal : 50
Miss Distance.Vertical : 0
Were Passengers Involved In Event : N
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
Took off from FRG runway 32. We were given multiple level offs and heading assignments to get us around Kennedy/NY airspace and eventually on course. Cloud bases were scattered at about 7500 feet. At the time of the encounter, we were VMC, level at 7000 feet, speed 240knots. I was comparing aircraft we could see outside with what was being shown on the TCAS. I then saw, what I initially thought was, a seagull at our altitude. Closer examination and proximity revealed it was a drone at our altitude. The closing speed was at least 240 knots possibly more. It passed off our right wing tip by about 50 feet. It was black, about the size of a baking sheet. There seemed to be an apparatus hanging from the bottom of the drone that was metallic in color. Possibly a rig to drop an object but I can't be certain or knowledgeable enough to make a certain claim. I made a report to ATC giving them as many details as possible.

Synopsis
Light Transport Captain reported a NMAC with a drone at 7000 feet on departure in New York's airspace.
**ACN: 1537607 (20 of 50)**

**Time / Day**
- Date: 201804
- Local Time Of Day: 1801-2400

**Place**
- Locale Reference. ATC Facility: ZZZ.ARTCC
- State Reference: US
- Altitude. MSL. Single Value: 24000

**Environment**
- Weather Elements / Visibility: Thunderstorm

**Aircraft**
- Reference: X
- 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: None
- Airspace. Class A: ZZZ

**Person**
- Reference: 1
- Location Of Person: Hangar / Base
- Reporter Organization: Government
- Function. Flight Crew: Pilot Flying
- Qualification. Flight Crew: Instrument
- Qualification. Flight Crew: Commercial
- Experience. Flight Crew. Last 90 Days: 50

**Events**
- ASRS Report Number. Accession Number: 1537607
- Human Factors: Situational Awareness
- Human Factors: Distraction

**Assessments**
- Contributing Factors / Situations: Company Policy
- Contributing Factors / Situations: Human Factors
Contributing Factors / Situations : Weather
Primary Problem : Weather

**Narrative: 1**

MQ9 drone aircraft was on patrol in ZZZ valley. Thunderstorms were approaching the ground control station. The decision was made to evacuate the ground control station until the thunderstorms passed instead of returning the aircraft to the airport for landing. The MQ9 aircraft was without a pilot at the controls for approximately one hour. The mission was continued after the ground control station was re-manned despite the fact that there were numerous thunderstorms in the area.

**Synopsis**

The pilot of an MQ9 Unmanned Aerial Vehicle (UAV) reported that, while conducting a tactical mission, he had to abandon his control station during a thunderstorm, leaving the drone without a pilot at the controls for approximately one hour.
**Time / Day**
- Date: 201804
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: PHL.Airport
- State Reference: PA
- Altitude: MSL. Single Value: 1000

**Environment**
- Flight Conditions: VMC

**Aircraft : 1**
- Reference: X
- ATC / Advisory: Tower: PHL
- Aircraft Operator: Air Carrier
- Make Model Name: Commercial Fixed Wing
- Crew Size: Number Of Crew: 2
- Operating Under FAR Part: Part 121
- Flight Phase: Initial Approach

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Airspace: Class B: PHL

**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: 1537522
- Human Factors: Distraction

**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: 1537839
- Human Factors: Distraction
Events
Anomaly. Inflight Event / Encounter : Other / Unknown
Detector. Person : Flight Crew
When Detected : In-flight

Assessments
Contributing Factors / Situations : Airport
Contributing Factors / Situations : Airspace Structure
Primary Problem : Airspace Structure

Narrative: 1
At approx. 1000’ AGL, my F/O said he had seen what looked like a drone go by. I do not know how close or whether above or below - I was Capt. and PF. I asked him to report it to the tower and he did. Upon landing, ATC requested that we call them with a number provided. My F/O asked if I wanted to call and said it would be better if he did so directly since I did not see the drone. No other actions taken.

Narrative: 2
Drone sighted 100’ below AC on final approach at approximately 1000’ above the ground on approach to 27L in PHL.

Synopsis
Air carrier flight crew reported they had observed an Unmanned Aerial Vehicle (UAV) go by the aircraft at about 1000 feet, while conducting an approach at the Philadelphia International Airport (PHL).
ACN: 1536555 (22 of 50)

Time / Day
- Date: 201804
- Local Time Of Day: 1201-1800

Place
- Locale Reference.Airport: SAN.Airport
- State Reference: CA
- Altitude.MSL.Single Value: 5000

Environment
- Flight Conditions: VMC
- Light: Daylight

Aircraft
- 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
- Flight Phase: Initial Approach
- Route In Use: Visual Approach
- Airspace.Class B: SAN

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)
- ASRS Report Number.Accession Number: 1536555
- Human Factors: Distraction
- Human Factors: Situational Awareness

Events
- Anomaly.Conflict: Airborne Conflict
- Anomaly.Deviation - Procedural: FAR
- Anomaly.Inflight Event / Encounter: Other / Unknown
- Detector.Person: Flight Crew
- Miss Distance.Vertical: 20
- When Detected: In-flight
- Result.Flight Crew: Requested ATC Assistance / Clarification
- Result.Air Traffic Control: Issued Advisory / Alert

Assessments
Contributing Factors / Situations: Airport
Contributing Factors / Situations: Airspace Structure
Contributing Factors / Situations: Human Factors
Primary Problem: Airport

Narrative: 1

Drone spotted at 5000 MSL off right wing less than 20 foot clearance. We were on visual approach clearance following approach guidance. First Officer was pilot monitoring and spotted it at 1:00 position with no time to notify me as it passed off our right wing. I never saw the object which he described as teal in color and had a flashing red strobe on top. We notified ATC and they began vectoring the traffic behind us off course so as to not have the same encounter.

Require ALL drones to have transponder and file flight plans when more than 500 AGL.

Synopsis

The pilot of an Embraer 175 aircraft reported a very close encounter with an Unmanned Aerial Vehicle (UAV), while conducting an approach to SAN. Though no evasive action was required, the event was immediately reported to Air Traffic Control.
ACN: 1536448 (23 of 50)

Time / Day
Date: 201804
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: ZSSS.Airport
State Reference: FO

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory.Ground: ZZZZ
ATC / Advisory.Tower: ZZZZ
Aircraft Operator: Corporate
Make Model Name: Cessna Citation Undifferentiated or Other Model
Crew Size: Number Of Crew: 2
Operating Under FAR Part: Part 91
Mission: Ferry
Nav In Use.Localizer/Glideslope/ILS: Runway 36R
Flight Phase: Landing

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: Corporate
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1536448
Human Factors: Distraction

Events
Anomaly.Conflict: Airborne Conflict
Anomaly.Inflight Event / Encounter: Other / Unknown
Detector.Person: Flight Crew
Miss Distance.Vertical: 100
Were Passengers Involved In Event: N
When Detected: In-flight
Result.General: Police / Security Involved

Assessments
Contributing Factors / Situations : Airport
Contributing Factors / Situations : Airspace Structure
Primary Problem : Airport

**Narrative: 1**

Flying into ZSSS Shanghai Hongqiao. When fully established and stable on ILS 36R at approx. 2nm - 3nm a drone came dangerously within 100 feet below the aircraft. No contact occurred and I advised both Tower and Ground Frequencies as well as a police officer in attendance of the aircraft on arrival. No follow up was provided or offered by local authorities.

Suggest that the Chinese authorities [to] monitor drone sales, [and] regulate the drone industry. Provide safeguards around airports to ensure safety of traffic in proximity. Train ATC and police authorities to deal with such events.

**Synopsis**

The Captain of a Cessna Citation aircraft reported a close encounter with an Unmanned Aerial Vehicle (UAV) while on approach to ZSSS. Though no evasive maneuvering was required, the event was reported to Air Traffic Control authorities.
Time / Day
Date : 201803
Local Time Of Day : 0601-1200

Place
Locale Reference.Airport : IAD.Airport
State Reference : DC
Relative Position.Distance.Nautical Miles : 4.5
Altitude.AGL.Single Value : 88

Environment
Flight Conditions : VMC
Weather Elements / Visibility : Windshear
Light : Daylight

Aircraft
Reference : X
Make Model Name : UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part.Other
Flight Plan : VFR
Mission : Utility
Airspace.Class B : IAD

Person
Reference : 1
Location Of Person : Hangar / Base
Reporter Organization : Contracted Service
Function.Flight Crew : Pilot Flying
Function.Flight Crew : Single Pilot
Experience.Flight Crew.Total : 7
Experience.Flight Crew.Last 90 Days : 4
Experience.Flight Crew.Type : 7
ASRS Report Number.Accession Number : 1534098
Human Factors : Training / Qualification
Human Factors : Situational Awareness

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

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

Narrative: 1
Conducted a 4 minute flight for a roof inspection. I misinterpreted UAS facility map data and conducted flight in Class B airspace of IAD. Violation was discovered during monthly flight reviews by my company's drone department. I thought the number listed in the facility map grid box indicated the floor of the overlying controlled airspace. I know better now.

Synopsis

UAV operator reported conducting a flight within IAD Class B airspace because he misread the chart.
ACN: 1533416 (25 of 50)

**Time / Day**

Date: 201804  
Local Time Of Day: 1201-1800

**Place**

Locale Reference.Airport: TPA.Airport  
State Reference: FL  
Relative Position.Distance.Nautical Miles: 3  
Altitude.MSL.Single Value: 900

**Environment**

Flight Conditions: VMC  
Weather Elements / Visibility.Visibility: 10  
Ceiling.Single Value: 3000

**Aircraft : 1**

Reference: X  
ATC / Advisory.Tower: TPA  
Aircraft Operator: Corporate  
Make Model Name: King Air C90 E90  
Crew Size.Number Of Crew: 1  
Operating Under FAR Part: Part 91  
Flight Plan: None  
Mission: Ferry  
Nav In Use.Localizer/Glideslope/ILS: Runway 19L  
Flight Phase: Final Approach  
Route In Use: Visual Approach  
Airspace.Class B: TPA

**Aircraft : 2**

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

**Person**

Reference: 1  
Location Of Person.Aircraft: X  
Location In Aircraft: Flight Deck  
Reporter Organization: Corporate  
Function.Flight Crew: Pilot Flying  
Function.Flight Crew: Single Pilot  
Qualification.Flight Crew: Multiengine  
Qualification.Flight Crew: Instrument  
Qualification.Flight Crew: Air Transport Pilot (ATP)  
Qualification.Flight Crew: Flight Instructor  
Experience.Flight Crew.Total: 15900
Events

Anomaly.Conflict : NMAC
Anomaly.Deviation - Procedural : Published Material / Policy
Anomaly.Deviation - Procedural : FAR
Detector.Person : Flight Crew
Miss Distance.Horizontal : 0
Miss Distance.Vertical : 100
When Detected : In-flight
Result.General : Police / Security Involved
Result.Air Traffic Control : Issued Advisory / Alert

Assessments

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

Narrative: 1

On visual approach to runway 19L, tracking glideslope and localizer. Following a B737 [who] reported to Tower that they had spotted a drone to the right, between 19L and 19R low. They gave me this warning. I spotted the large yellow and gray drone going by 100 feet above the aircraft. Reported to Tower.

Synopsis

King Air pilot reported a NMAC with a UAV while on final approach to TPA.
ACN: 1532071 (26 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: COF.Airport
- State Reference: FL

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory: Tower: MLB
- Aircraft Operator: Personal
- Make Model Name: Helicopter
- Crew Size: Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: None
- Mission: Ferry
- Flight Phase: Cruise
- Route In Use: Direct
- Airspace: Class D: COF

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace: Class D: COF

**Person**
- Reference: 1
- Location Of Person: Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Personal
- Function: Flight Crew: Single Pilot
- Function: Flight Crew: Pilot Flying
- Qualification: Flight Crew: Rotorcraft
- Qualification: Flight Crew: Commercial
- Experience: Flight Crew: Total: 7400
- Experience: Flight Crew: Last 90 Days: 30
- Experience: Flight Crew: Type: 3000
- ASRS Report Number: Accession Number: 1532071
- Human Factors: Other / Unknown

**Events**
Anomaly.ATC Issue : All Types
Anomaly.Conflict : Airborne Conflict
Detector.Person : Flight Crew
When Detected : In-flight
Result.General : None Reported / Taken

Assessments

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

Narrative: 1

While flying through Patrick AFB's class D airspace, I had a near miss with an unauthorized drone operating without the knowledge of the Patrick AFB Tower. This drone was launched from an Air Force owned housing annex [which is] within the boundaries of the Patrick AFB class Delta airspace. I notified the Patrick AFB flight safety department and tower on two prior occasions to report the same activity. I reported the near miss to MLB Tower and they notified the Patrick AFB Tower due to the fact that I was handed off to the MLB Tower while still inside Patrick AFB's airspace. I once again reported this to the Patrick AFB's flight safety department and requested they address this issue. As a result I was barred access from the base.

Synopsis

Helicopter pilot reported a NMAC with a drone operating while traversing Patrick AFB's class D airspace.
**ACN: 1531479 (27 of 50)**

**Time / Day**
- Date: 201803
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: ZZZ.Airport
- State Reference: US
- Altitude.AGL.Single Value: 100

**Environment**
- Light: Daylight

**Aircraft**
- Reference: X
- Aircraft Operator: Corporate
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Mission: Photo Shoot
- Flight Phase: Cruise
- Airspace.Class G: ZZZ

**Person**
- Reference: 1
- Location Of Person: Gate / Ramp / Line
- Reporter Organization: Contracted Service
- Function.Flight Crew: Other / Unknown
- Qualification.Flight Crew: Commercial
- Experience.Flight Crew.Total: 20
- Experience.Flight Crew.Last 90 Days: 5
- Experience.Flight Crew.Type: 20
- ASRS Report Number.Accession Number: 1531479
- Human Factors: Communication Breakdown
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: Ground Personnel

**Events**
- Anomaly.Airspace Violation: All Types
- Anomaly.Deviation - Procedural: Published Material / Policy
- Anomaly.Deviation - Procedural: FAR
- Detector.Person: Observer
- When Detected.Other
- Result.General: Flight Cancelled / Delayed

**Assessments**
- Contributing Factors / Situations: Airspace Structure
- Contributing Factors / Situations: Human Factors
- Contributing Factors / Situations: Airport
Narrative: 1

The drone was capturing footage of pilot flying a Cessna on a right turn loop. The plane pilot was practicing fly-throughs and touchdowns. I, the drone pilot, was in communication with the plane pilot the entire time via a hand radio. I, the drone pilot, had direct instruction to land the drone immediately should another plane come into the vicinity of the airfield. The drone remained a safe distance away from the runway to ensure no damage came to the plane, pilots or drone. While flying I was approached by other pilots (not in planes) asking if I had the permission of the airfield manager to fly the drone in the airfield. This prior authorization was not arranged. Learning this, I, the drone pilot, landed the drone and stopped filming. The film production company I contract for has permission to fly within that airspace however proper contact was not made with the airfield manager beforehand. This airport does not have an air traffic control tower, however, all movements of the plane and drone were communication on the airport frequency. No other planes entered the vicinity while the drone was in operation. No injuries or accidents occurred.

Synopsis

UAV Operator reported conducting a film shoot on an airport without obtaining proper approval from airport management.
ACN: 1531194 (28 of 50)

Time / Day
Date: 201803
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Altitude.AGL.Single Value: 75

Environment
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory.CTAF: ZZZ
Aircraft Operator: Personal
Make Model Name: PA-32 Cherokee Six/Lance/Saratoga/6X
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Mission: Personal
Flight Phase: Initial Climb
Airspace.Class G: ZZZ

Aircraft: 2
Reference: Y
Aircraft Operator: Corporate
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part.Other
Mission: Photo Shoot
Flight Phase: Cruise
Airspace.Class G: ZZZ

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: Private
Experience.Flight Crew.Total: 800
Experience.Flight Crew.Last 90 Days: 15
Experience.Flight Crew.Type: 200
ASRS Report Number.Accession Number: 1531194
Human Factors: Distraction
Human Factors: Situational Awareness

Events
Anomaly.Conflict : NMAC
Anomaly.Deviation - Procedural : FAR
Detector.Person : Flight Crew
Miss Distance.Horizontal : 30
Miss Distance.Vertical : 0
When Detected : In-flight
Result.General : None Reported / Taken

Assessments
  Contributing Factors / Situations : Procedure
  Primary Problem : Procedure

Narrative: 1
ZZZ was operating under a NOTAMed closed runway with permission to depart giving by
the airport coordinator 5 minutes before taxi. A film crew with a helicopter and a small
drone was operating at the airport. Upon announcing on the CTAF that the aircraft was
under back-taxi on the runway to the run-up area to avoid the helicopter near the taxiway,
an unknown (possibly helicopter operator) asked a 20-25 minute delay in taxi. Due to an
arrival schedule and perceived unreasonable request by the unknown requester it was
communicated that the taxi delay request could not be accommodated by the aircraft. The
aircraft entered the runway and was in the process of taxi when the helicopter air-taxied
onto the runway without further communication. The aircraft transmitted on the CTAF that
the runway was occupied. The helicopter replied that the runway was closed for their use.
The aircraft stopped taxi operations on the runway and held position. The helicopter then
continued to fly low passes over the aircraft (approximately 15 ft above the aircraft) and
along the entire runway length with aggressive maneuvering. During one of the helicopter
passes, when the helicopter was clear of the aircraft, the aircraft completed the back-taxi
to the run up area and waited for the helicopter to clear the runway. When the helicopter
landed again, the aircraft requested status from the helicopter on the CTAF. The query was
not replied to. The aircraft made a takeoff call and entered the runway. A normal takeoff
was accomplished, however during the climb out at an altitude of approximately 75 ft, an
unexpected and unknown drone quadcopter was observed hovering adjacent to the
runway between the taxiway and runway. This drone was passed with approximately 30 ft
of horizontal distance and 0 ft of vertical clearance. No communication from the drone was
observed.

The pilot of the aircraft felt that the helicopter performed a dangerous and unnecessary
maneuver near the aircraft that had the right of way. The pilot also feels that the drone
operator took an unnecessary risk by operating the drone in the vicinity of a departing
aircraft without prior arrangement or communication with the aircraft. Both of the
situations could have been avoided with better coordination from the airport coordinator
and with increased communication from the helicopter and drone pilots.

Synopsis
PA32 pilot reported a drone flew approximately 30 feet away in the departure corridor
during the initial climb out.
Time / Day

Date: 201804
Local Time Of Day: 1201-1800

Place

Locale Reference.Airport: DEN.Airport
State Reference: CO
Altitude.AGL.Single Value: 100

Environment

Light: Daylight

Aircraft

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
Airspace.Class B: DEN

Person

Reference: 1
Location Of Person: Hangar / Base
Reporter Organization: Personal
Function.Flight Crew: Pilot Flying
Experience.Flight Crew.Total: 1
Experience.Flight Crew.Last 90 Days: 1
Experience.Flight Crew.Type: 1
ASRS Report Number.Accession Number: 1530897
Human Factors: Confusion
Human Factors: Training / Qualification
Human Factors: Situational Awareness

Events

Anomaly.Airspace Violation: All Types
Anomaly.Deviation - Procedural: FAR
Detector.Person: Other Person
Were Passengers Involved In Event: N
When Detected: In-flight
Result.General: None Reported / Taken

Assessments

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

Narrative: 1
I flew my drone within a few hundred feet radius of my parents' house mainly keeping the craft parallel to the road that runs through the neighborhood. I flew for about 15-20 minutes total. I was mostly at an altitude below the tree line, somewhere between 10 and 30 feet. Highest altitude attained was right around 100 feet for a few seconds. I was under a false impression that I was able to fly the drone in the area, but now after looking at some of the maps I am not so certain. I did not defeat any safety devices on my drone or "unlock" any software to fly there. One map I'm looking at shows that the airspace is not class B; another map I'm looking at shows that it is, so out of caution I will refrain from flying there anymore now that I know I could possibly be violating protected airspace. I am a novice with under 1 hour of flight time.

Synopsis

Unmanned Aerial Vehicle (UAV) operator reported that he was unsure whether he was in violation of FAR 107 while operating his drone due to ambiguity on the airspace charts.
**ACN: 1529932** (30 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: LAX.Airport
- State Reference: CA
- Altitude.MSL.Single Value: 1900

**Environment**
- Flight Conditions: IMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory.Tower: LAX
- 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
- 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 Flying
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- ASRS Report Number.Accession Number: 1529932
- Human Factors: Situational Awareness

**Events**
- Anomaly.Conflict: Airborne Conflict
- Detector.Person: Flight Crew
- Miss Distance.Vertical: 200
- 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
As we crossed the FAF for Runway 25L, my FO spotted a drone (a small quadcopter) hovering approximately 200 feet below the aircraft. ATC was advised of the drone sighting. Upon arrival in LAX a call was made to discuss the drone sighting.

Synopsis
EMB-175 Captain reported the First Officer sighted a UAV 200 feet below the aircraft on final approach to Runway 25L at LAX.
ACN: 1529633

Time / Day
- Date: 201803
- Local Time Of Day: 0601-1200

Place
- Locale Reference.Airport: PBI.Airport
- State Reference: FL
- Altitude.MSL.Single Value: 2100

Environment
- Light: Daylight

Aircraft: 1
- Reference: X
- ATC / Advisory.Tower: PBI
- 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: PBI

Aircraft: 2
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace.Class C: PBI

Person
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: Air Carrier
- Function.Flight Crew: Other / Unknown
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Experience.Flight Crew.Total: 20200
- ASRS Report Number.Accession Number: 1529633
- Human Factors: Situational Awareness

Events
- Anomaly.Conflict: Airborne Conflict
- Detector.Person: Other Person
- 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
I was jumpseating in the cockpit. [At] 700 AGL, 2100 ft from the runway, I noticed what I first thought was a balloon, stationary or moving from our 10:30 or 11 o'clock toward our left wing 9 o'clock. I did not see the threat as significant enough to distract the pilots. As we continued, at about 700 AGL the object, which was now in our 9:30 position, at our altitude, was clearly a small white UAV. I asked the pilots if they saw the drone off to the left and they replied that they did not.

The drone was reported to the Tower who requested that we call the Approach Control facility. I reported the event to ATC, [the local law enforcement] office, and eventually to the FAA.

Synopsis
Captain, jumpseating on a B737, reported a close encounter with a small UAV on final approach which was not seen by the flying flight crew.
ACN: 1529567 (32 of 50)

**Time / Day**
Date: 201803
Local Time Of Day: 0601-1200

**Place**
Altitude.AGL.Single Value: 0

**Aircraft**
Reference: X
Aircraft Operator: Government
Make Model Name: UAV - Unpiloted Aerial Vehicle
Mission: Training
Maintenance Status.Maintenance Deferred: N
Maintenance Status.Maintenance Items Involved: Testing
Maintenance Status.Maintenance Items Involved: Installation

**Component**
Aircraft Component: Propeller Pitch Change Mechanism
Aircraft Reference: X
Problem: Improperly Operated

**Person**
Reference: 1
Location Of Person: Company
Reporter Organization: Military
Function.Maintenance: Technician
Qualification.Maintenance: Powerplant
Qualification.Maintenance: Airframe
Experience.Maintenance.Technician: 25
ASRS Report Number.Accession Number: 1529567
Human Factors: Communication Breakdown
Communication Breakdown.Party1: Maintenance
Communication Breakdown.Party2: Maintenance

**Events**
Anomaly.Aircraft Equipment Problem: Less Severe
Anomaly.Deviation - Procedural: Published Material / Policy
Detector.Person: Maintenance
When Detected: Routine Inspection
Result.General: Maintenance Action
Result.Aircraft: Aircraft Damaged

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

**Narrative: 1**
While preforming propeller blade angle rigging, a movement of the power lever was commanded by maintenance technician 1 at the aircraft via radio to maintenance technician 2 in the Ground Control Station. Not realizing a rig pin was installed in the Propeller Pitch Controller, PPC, by maintenance technical 3, the power servo sheered the compass mount out of rig with the PPC housing. Though the PPC unit was not damaged the rigging compass mounted to the PPC was damaged requiring the replacement of the entire PPC. It was my perception as technician 1 that communication with technician 3 was not good and by the time I made the request to move the power lever it was too late to remove the rig pin and prevent the damage, with great force the rig pin was removed.

Synopsis

A UAV Technician reported that the pitch controller was moved with the rig pin still installed.
ACN: 1528848 (33 of 50)

Time / Day

Date: 201803
Local Time Of Day: 1201-1800

Place

Locale Reference.Airport: ZZZ.Airport
State Reference: US
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.Tower: ZZZ
Aircraft Operator: Government
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part: Part 91
Flight Plan: None
Mission: Training
Flight Phase: Landing
Route In Use: None
Airspace.Class D: ZZZ

Aircraft: 2

Reference: Y
ATC / Advisory.Tower: ZZZ
Aircraft Operator: Personal
Make Model Name: Skylane 182/RG Turbo Skylane/RG
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: None
Mission: Personal
Flight Phase: Landing
Airspace.Class D: ZZZ

Person

Reference: 1
Location Of Person: Hangar / Base
Reporter Organization: Government
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Instrument
Qualification.Flight Crew: Air Transport Pilot (ATP)
Qualification.Flight Crew: Flight Instructor
Qualification.Flight Crew: Multiengine
Experience.Flight Crew.Total: 6000
Events
Anomaly.Conflict: Airborne Conflict
Detector.Person: Flight Crew
Miss Distance.Horizontal: 3000
Miss Distance.Vertical: 3000
Were Passengers Involved In Event: N
When Detected: In-flight
Result.Air Traffic Control: Issued Advisory / Alert

Assessments
Contributing Factors / Situations: Airport
Contributing Factors / Situations: Procedure
Primary Problem: Ambiguous

Narrative: 1

On the second overflight of the Runway, half way down the downwind leg to Runway 25 we were cleared for the option (landing, touch and go, over-fly) to Runway 25. Prior to turning a right base to Runway 25, I heard additional traffic being cleared by the Tower for a "right base to Runway 29." We turned "downwind" to "base" at 2500 MSL (1000 AGL), prior to turning final (approximately halfway down our base leg), we heard an aircraft report to Tower that we were very close to him. The Tower stated to aircraft that we only looked close to him and that there was plenty of separation between the two aircraft.

Synopsis
UAV Operator reported that an aircraft in the traffic pattern felt the UAV was "very close," but the aircraft was advised by Tower that there was "plenty of separation."
**Time / Day**

Date: 201803  
Local Time Of Day: 1201-1800

**Place**

Locale Reference.Airport: ORD.Airport  
State Reference: IL  
Altitude.AGL.Single Value: 300

**Environment**

Flight Conditions: VMC  
Light: Daylight

**Aircraft : 1**

Reference: X  
ATC / Advisory.Tower: ORD  
Aircraft Operator: Air Carrier  
Make Model Name: A319  
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: Final Approach  
Airspace.Class B: ORD

**Aircraft : 2**

Reference: Y  
Make Model Name: UAV - Unpiloted Aerial Vehicle  
Operating Under FAR Part.Other  
Flight Plan: None  
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 Not Flying  
Qualification.Flight Crew: Air Transport Pilot (ATP)  
Experience.Flight Crew.Total: 10761  
Experience.Flight Crew.Last 90 Days: 200  
Experience.Flight Crew.Type: 6792  
ASRS Report Number.Accession Number: 1528336  
Human Factors: Situational Awareness

**Events**
Anomaly.Conflict: NMAC
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
Drone sighted between 350-300 feet AGL approximately 200-300 yards north of the final to 09L. It was initially in my 10 o’clock position from the Captain’s seat and moved very quickly to my 8 o’clock position as we passed 300 feet. Hovered and then moved erratically and VERY rapidly west in level flight parallel to final approach. Drone was white in color and appeared to be approximately 2 feet across. I called it out to First Officer who was hand flying and focused on the approach. Advised Tower (they appeared quite busy). Continued to a normal approach and landing.

Synopsis
A319 Captain reported a NMAC with an Unpiloted Aerial Vehicle on short final to ORD Runway 09L.
ACN: 1527986 (35 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference.Airport: ONT.Airport
- State Reference: CA
- Altitude.AGL.Single Value: 150

**Environment**
- Weather Elements / Visibility: Cloudy
- Light: Daylight

**Aircraft**
- Reference: X
- Aircraft Operator: Corporate
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Mission: Photo Shoot
- Flight Phase: Cruise
- Airspace.Class C: ONT

**Person**
- Reference: 1
- Reporter Organization: Contracted Service
- Function.Flight Crew: Pilot Flying
- ASRS Report Number.Accession Number: 1527986
- Human Factors: Communication Breakdown
- Human Factors: Time Pressure
- Communication Breakdown.Party1: Flight Crew
- Communication Breakdown.Party2: ATC

**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.General: None Reported / Taken

**Assessments**
- Contributing Factors / Situations: Airspace Structure
- Contributing Factors / Situations: Company Policy
- Primary Problem: Company Policy

**Narrative: 1**
I responded to an incident. I checked the airspace I was going to launch the UAS Mavic Drone and I was in Ontario Airport's Class C airspace. I made the proper phone calls to
obtain a waiver to fly no more than 200 feet to take aerial photos and video. When I received the phone call back with information that a waiver was submitted and notified them I had a VO (visual observer) for this flight of no more than .25 mile radius. I performed approximately a 10 minute flight over the incident and never exceeded 150 feet in altitude. After my flight, I received a phone call back that they were still waiting for approval from the FAA to obtain the waiver. I then informed that I was completed with the flight over derailment and then realized the waiver was not approved at the time of flight.

There was communication failure on the waiver and the pilot misunderstood that the waiver that was submitted was not a clearance for flight. We have learned that the actual waiver must be printed and obtained with the drone pilot before the flight and contact with the ATC must take place with a 10 minute wait before takeoff after notifying the airport and that the waiver is in hand.

**Synopsis**

UAV Operator reported thinking he was cleared via a waiver to operate within ONT airspace, but after the flight determined the waiver had never been obtained.
ACN: 1523750 (36 of 50)

**Time / Day**
- Date: 201803
- Local Time Of Day: 0601-1200

**Place**
- Locale Reference: Airport: SFO.Airport
- State Reference: CA
- Altitude: MSL: Single Value: 4700

**Environment**
- Flight Conditions: VMC
- Light: Daylight

**Aircraft : 1**
- Reference: X
- ATC / Advisory: TRACON: NCT
- Aircraft Operator: Air Carrier
- Make Model Name: B757 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
- Flight Phase: Climb
- Route In Use: SID: TRUKN2
- Airspace: Class B: SFO

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace: Class B: SFO

**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: First Officer
- Qualification: Flight Crew: Air Transport Pilot (ATP)
- Experience: Flight Crew: Last 90 Days: 663
- ASRS Report Number: Accession Number: 1523750
- Human Factors: Situational Awareness

**Person : 2**
On climb out from Runway 1R at SFO for the TRUKN2 near TYDYE (over the bay) at approximately 4700 ft MSL, I witnessed an object to the right of the windscreen that appeared to be hovering. When we got closer to it, the object looked like a mid-size drone similar to a DJI Inspire 2 quadcopter (I Googled drones after the flight and this one looked the closest). I reported it to ATC when I saw it and they reported it to the trail aircraft. I flew F-16s up until a year ago where we routinely flew formation at 50-500 feet away from each other, so I consider myself to have a good gauge of aircraft distances. I estimate we passed within 500 ft from the drone since I was able to spot it and note details on the shape and size.
ACN: 1522263 (37 of 50)

Time / Day
Date: 201802
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: MCO.Airport
State Reference: FL

Environment
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory.Tower: MCO
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
Flight Phase: Final Approach
Airspace.Class B: MCO

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part: Other
Flight Phase: Cruise
Airspace.Class B: MCO

Person
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 Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1522263
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: Human Factors
Primary Problem: Human Factors

**Narrative: 1**

On final approach into MCO, drone passed off our right wing about 100 feet below us and between 700-1000 feet to our right (west). Drone in controlled airspace not communicating with ATC.

**Synopsis**

A321 First Officer reported an inflight conflict with a UAV on short final into MCO.
**ACN: 1522038 (38 of 50)**

**Time / Day**
- Date: 201802
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: MRY.Airport
- State Reference: CA
- Relative Position.Distance.Nautical Miles: 5
- Altitude.MSL.Single Value: 2500

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility.Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 25000

**Aircraft : 1**
- Reference: X
- ATC / Advisory.TRACON: NCT
- Aircraft Operator: FBO
- Make Model Name: Skyhawk 172/Cutlass 172
- Crew Size.Number Of Crew: 1
- Operating Under FAR Part: Part 91
- Flight Plan: None
- Mission: Personal
- Flight Phase: Cruise
- Route In Use: None
- Airspace.Class C: MRY

**Aircraft : 2**
- Reference: Y
- Make Model Name: UAV - Unpiloted Aerial Vehicle
- Operating Under FAR Part: Other
- Flight Phase: Cruise
- Airspace.Class C: MRY

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: FBO
- Function.Flight Crew: Single Pilot
- Qualification.Flight Crew: Private
- Experience.Flight Crew.Last 90 Days: 11
- Experience.Flight Crew.Type: 225
- ASRS Report Number.Accession Number: 1522038
- Human Factors: Situational Awareness
Events

Anomaly.Conflict : Airborne Conflict
Detector.Person : Flight Crew
Miss Distance.Horizontal : 700
Miss Distance.Vertical : 500
When Detected : In-flight
Result.General : Police / Security Involved
Result.Flight Crew : Requested ATC Assistance / Clarification

Assessments

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

Narrative: 1

In cruise on a sightseeing flight around Monterey Peninsula. Radio contact with Norcal following departure from MRY. Ceiling and visibility unlimited. On northbound track over the town of Pacific Grove caught sight of a fast moving drone southbound off my right wing and within 500 ft of my altitude. Reported sighting to Norcal. They asked if I wanted to make a report and I replied in the affirmative. Several minutes later I heard a pilot of Piper Cherokee south of my position reporting what I assume was the same drone passing him.

Synopsis

C172 pilot reported an airborne conflict with a UAV in the vicinity of MRY airport.
ACN: 1522031 (39 of 50)

Time / Day
Date: 201706
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: CRQ.Airport
State Reference: CA
Relative Position.Distance.Nautical Miles: 4
Altitude.MSL.Single Value: 1500

Environment
Flight Conditions: VMC
Weather Elements / Visibility. Visibility: 10
Light: Daylight
Ceiling. Single Value: 25000

Aircraft: 1
Reference: X
ATC / Advisory. Tower: CRQ
Aircraft Operator: FBO
Make Model Name: Skyhawk 172/Cutlass 172
Crew Size.Number Of Crew: 1
Operating Under FAR Part: Part 91
Flight Plan: None
Mission: Personal
Flight Phase: Initial Approach
Route In Use: VFR Route
Route In Use: Direct
Airspace.Class E: SCT

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part.Other
Flight Phase: Cruise
Airspace.Class E: SCT

Person
Reference: 1
Location Of Person.Aircraft: X
Location In Aircraft: Flight Deck
Reporter Organization: FBO
Function.Flight Crew: Pilot Flying
Function.Flight Crew: Single Pilot
Qualification.Flight Crew: Private
Experience.Flight Crew.Last 90 Days: 11
Experience.Flight Crew.Type: 225
ASRS Report Number. Accession Number: 1522031
Human Factors: Situational Awareness

**Events**
Anomaly. Conflict: NMAC
Detector. Person: Flight Crew
Miss Distance. Horizontal: 100
Miss Distance. Vertical: 200
When Detected: In-flight
Result. General: Police / Security Involved
Result. Flight Crew: Requested ATC Assistance / Clarification

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

**Narrative: 1**
Southbound on descent into Palomar one mile past the VISTA reporting point. Silver drone traveling opposite direction passed very close by. No time for evasive action. Reported incident to the Tower Controller within about one minute. Tower advised other traffic to be on lookout and asked that I call Tower on landing. I did as requested and they said that a report would go to the FAA. Never received a call back. Tower did advise that a permit request for drone activities was approved for the general area of the sighting that day but the altitude limit was set to 400 ft, over 1,000 feet lower than where we observed the [drone].

**Synopsis**
C172 pilot reported a NMAC with a UAV on descent into CRQ airport.
Time / Day
Date: 201802
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: MCO.Airport
State Reference: FL

Aircraft: 1
Reference: X
ATC / Advisory.Tower: MCO
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.Localizer/Glideslope/ILS: Runway 18R
Flight Phase: Initial Approach
Airspace.Class B: MCO

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Airspace.Class B: MCO

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: 1521534
Human Factors: Situational Awareness

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

Narrative: 1

On arrival to 18R at MCO, near outer marker, the first officer reported a drone to the right and below the airplane. I did not see the drone, First Officer (FO) stated that it was near final approach, but below our airplane. We did not report it as a near miss, as FO stated that it was not. The FO immediately reported the drone to MCO Tower.

Synopsis

A321 Captain reported a conflict with a drone near the outer marker of the approach to MCO airport.
ACN: 1521507 (41 of 50)

Time / Day
Date: 201802
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: LAX.Airport
State Reference: CA

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory.Tower: LAX
Aircraft Operator: Fractional
Make Model Name: Gulfstream IV / G350 / G450
Crew Size.Number Of Crew: 2
Operating Under FAR Part: Part 91
Flight Plan: IFR
Mission: Ferry
Nav In Use.Localizer/Glideslope/ILS: Runway 24R
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: Fractional
Function.Flight Crew: Captain
Function.Flight Crew: Pilot Not Flying
Qualification.Flight Crew: Air Transport Pilot (ATP)
ASRS Report Number.Accession Number: 1521507
Human Factors: Situational Awareness

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

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

Narrative: 1  
On visual approach in VMC following the ILS 24R course at the FAF configured with gear down and flaps 20, a bright red quadcopter drone passed below us less than 100 feet from 12 o'clock position to slightly right of nose. Reported immediately to LAX Tower who issued an alert to a nearby police helicopter. Upon landing did not observe any damage or evidence that we hit the drone.  

Event happened so fast that my alert on the frequency would help following aircraft to be on lookout to take necessary action.  

Synopsis  
G450 Captain reported a NMAC with a UAV on approach to Runway 24R at LAX.
ACN: 1519589 (42 of 50)

Time / Day
Date: 201802
Local Time Of Day: 1201-1800

Place
Locale Reference: Airport: SFO.Airport
State Reference: CA
Altitude.MSL.Single Value: 5000

Environment
Flight Conditions: VMC
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory: TRACON: NCT
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: FMS Or FMC
Flight Phase: Climb
Route In Use.STAR: TRUKN2
Airspace.Class B: SFO

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part: Other
Flight Phase: Cruise
Airspace.Class B: SFO

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)
Experience.Flight Crew.Last 90 Days: 102
Experience.Flight Crew.Type: 899
ASRS Report Number.Accession Number: 1519589
Human Factors: Situational Awareness

Events
Anomaly.Conflict : NMAC
Detector.Person : Flight Crew
Miss Distance.Horizontal : 100
Miss Distance.Vertical : 300
When Detected : In-flight

Assessments

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

Narrative: 1

While climbing through 5000 on the TRUKN2 departure off of 28L, I noticed a small drone pass approximately 300 ft below and 100 ft left of our aircraft. I notified NORCAL Departure on 120.9 and they relayed the info to a flight departing behind us.

Synopsis

A320 Captain reported a NMAC with a drone on departure from SFO.
**ACN: 1518262** (43 of 50)

**Time / Day**

- **Date**: 201802
- **Local Time Of Day**: 1201-1800

**Place**

- **Locale Reference.Airport**: OAK.Airport
- **State Reference**: CA
- **Altitude.MSL.Single Value**: 1400

**Environment**

- **Flight Conditions**: VMC
- **Light**: Daylight

**Aircraft : 1**

- **Reference**: X
- **ATC / Advisory.Tower**: OAK
- **Aircraft Operator**: Air Carrier
- **Make Model Name**: MD-11
- **Crew Size.Number Of Crew**: 2
- **Operating Under FAR Part**: Part 121
- **Flight Plan**: IFR
- **Mission**: Cargo / Freight
- **Nav In Use**: FMS Or FMC
- **Flight Phase**: Final Approach
- **Route In Use**: Visual Approach
- **Airspace.Class C**: OAK

**Aircraft : 2**

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

**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)
- **ASRS Report Number.Accession Number**: 1518262
- **Human Factors**: Distraction
- **Human Factors**: Situational Awareness
- **Human Factors**: Time Pressure

**Events**
On final approach (visual approach) to OAK runway 30 at approximately 1400 feet MSL, we noticed what appeared to be a small flock of birds slightly to the left of our approach course. It was low and located between the runway threshold and the aircraft.

The object(s) appeared to be black in color continued to climb in a southwest bound direction over the bay. At approximately 1200 feet MSL, the object began a rapid acceleration and aggressive climb. The autopilot was disconnected in case any evasive maneuvering would be necessary. The object made a rapid westerly climbing maneuver passing off the left side of the aircraft between 1200 and 1000 AGL. The object became clearly visible at that time; it was a black quad copter drone. The drone passed off the left side of the aircraft by approximately 500 to 1000 ft. We immediately relayed the information to the tower and continued the approach to a normal landing. During taxi in provided ground control with any additional information, they requested.

Drone operating within the airport traffic area. It appears to be very difficult for airport authorities to secure the airport area from incursions by drones. Crew awareness is probably the only realistic defense against such incidents. Drones may become as numerous and hazardous as birds and other wildlife threats.

Synopsis

MD-11 flight crew reported an Airborne Conflict with a drone during final approach for landing.
ACN: 1516746

Time / Day
Date: 201802
Local Time Of Day: 1201-1800

Place
Locale Reference.Airport: DAY.Airport
State Reference: OH

Environment
Light: Daylight

Aircraft: 1
Reference: X
ATC / Advisory.TRACON: CMH
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 C: DAY

Aircraft: 2
Reference: Y
Make Model Name: UAV - Unpiloted Aerial Vehicle
Operating Under FAR Part: Other
Flight Phase: Cruise
Airspace.Class C: DAY

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: 1516746
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 : Human Factors
Primary Problem : Human Factors

**Narrative: 1**

We were given a heading to the airport to set up our approach. We both noticed a solid blue block aircraft without altitude encoding coming directly at us less than five miles away. We contacted approach and let them [know] what was going on and asked for a deviation to the left to avoid the unknown traffic. We did make the turn, and it seemed the aircraft would have hit us. We [were] in the bottom of the clouds and could not see it. After we passed the aircraft we continued to the approach and landed with no further event. I did call ATC and discussed the event. They said they had no radar targets. We both came to the conclusion it was a drone. No further issues.

**Synopsis**

CRJ-700 Captain reported an airborne conflict with what was believed a UAV in the vicinity of DAY airport.
**ACN: 1516305 (45 of 50)**

**Time / Day**
- Date: 201802
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: O88.Airport
- State Reference: CA
- Relative Position.Angle.Radial: 070
- Relative Position.Distance.Nautical Miles: 10
- Altitude.MSL.Single Value: 1400

**Environment**
- Flight Conditions: VMC
- Weather Elements / Visibility.Visibility: 10
- Light: Daylight
- Ceiling.Single Value: 8000

**Aircraft : 1**
- Reference: X
- ATC / Advisory.CTAF: O88
- 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: VFR
- Mission: Training
- Flight Phase: Final Approach
- Route In Use: Visual Approach
- Airspace.Class E: O88

**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 E: O88

**Person**
- Reference: 1
- Location Of Person.Aircraft: X
- Location In Aircraft: Flight Deck
- Reporter Organization: FBO
- Function.Flight Crew: Instructor
- Function.Flight Crew: Pilot Flying
- Qualification.Flight Crew: Instrument
- Qualification.Flight Crew: Flight Instructor
- Qualification.Flight Crew: Commercial
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Total : 2900
Experience.Flight Crew.Last 90 Days : 65
ASRS Report Number.Accession Number : 1516305
Human Factors : Situational Awareness

Events
Anomaly.Conflict : Airborne Conflict
Detector.Person : Flight Crew
Miss Distance.Horizontal : 5000
Miss Distance.Vertical : 800
When Detected : In-flight
Result.General : None Reported / Taken

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

Narrative: 1
While inbound to land at Rio Vista Airport in VMC, my student pilot and I were setting up to approach runway 7 at the 45 degree entry angle to the downwind leg. I had just completed the landing checklist and a 10 NM advisory radio transmission on CTAF 122.725. My attention was immediately drawn to a large RC aircraft making aerobatic maneuvers directly in front of my aircraft approximately 800 feet below my flight path and was operating WELL above the 400 ft UAS flight altitude restriction. I was alarmed to see the aircraft at this altitude and recognized flight at this altitude by (UAS) is prohibited by the FAA. I did NOT have to make any evasive action. However, I continued my concern about the RA aircraft and where it was headed so I could avoid evasive action or collision. Both I and my student saw the aircraft initially but we did NOT see the aircraft again. The flight terminated at Rio Vista Airport (O88) without any further incident.

After landing I researched information via the internet. There is a Remote-Controlled Airport near Isleton, Ca. In conclusion, it is my opinion the RC aircraft I witnessed exceeding the FAA altitude prohibition was operating from this location.

Synopsis
PA28 flight instructor landing at O88 airport reported observing a RC aircraft apparently operating outside of the charted parameters associated with the RC operations area.
**ACN: 1516103 (46 of 50)**

**Time / Day**
- Date: 201802
- Local Time Of Day: 1201-1800

**Place**
- Locale Reference.Airport: LGA.Airport
- State Reference: NY
- Altitude.MSL.Single Value: 4000

**Environment**
- Flight Conditions: VMC

**Aircraft : 1**
- Reference: X
- ATC / Advisory.TRACON: N90
- Aircraft Operator: Air Carrier
- Make Model Name: A319
- 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
- Nav In Use.Localizer/Glideslope/ILS: Runway 22
- Flight Phase: Final 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: Pilot Flying
- Function.Flight Crew: Captain
- Qualification.Flight Crew: Air Transport Pilot (ATP)
- Qualification.Flight Crew: Multiengine
- Qualification.Flight Crew: Instrument
- Experience.Flight Crew.Type: 1892
- ASRS Report Number.Accession Number: 1516103

**Person : 2**
Reference : 2
Location Of Person.Aircraft : X
Location In Aircraft : Flight Deck
Reporter Organization : Air Carrier
Function.Flight Crew : Pilot Not Flying
Function.Flight Crew : First Officer
Qualification.Flight Crew : Air Transport Pilot (ATP)
Qualification.Flight Crew : Instrument
Qualification.Flight Crew : Multiengine
Experience.Flight Crew.Type : 642
ASRS Report Number.Accession Number : 1516102

Events
Anomaly.Conflict : NMAC
Detector.Person : Flight Crew
Detector.Person : Air Traffic Control
When Detected : In-flight
Result.Air Traffic Control : Issued Advisory / Alert

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

Narrative: 1
While on approach frequency, ATC advised us of an unauthorized drone about two miles east of GREKO at 2000 feet on ILS 22. On downwind, at 4000 feet about four miles east of GREKO, we passed the drone. It was about co-altitude and about 50-100 yards off the right hand side of aircraft. We did not have to maneuver. Drone was about 3 feet in size and red in color.

Narrative: 2
Spotted and reported a drone, red in color, within 100 yards of aircraft. Drone seemed to be 20-30 feet lower in altitude. Could not tell if drone was hovering or moving. Crew reported to ATC. Approximately 5-10 minutes earlier, it was reported at 2,000 feet.

Synopsis
A319 flight crew reported a NMAC with a drone during their approach to LGA.
ACN: 1513565 (47 of 50)

Time / Day
Date: 201801
Local Time Of Day: 0601-1200

Place
Locale Reference.Airport: ZZZ.Airport
State Reference: US
Relative Position.Distance.Nautical Miles: 2.7
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
Flight Plan: None
Mission: Training
Flight Phase: Cruise
Airspace.Class G: ZZZ

Person
Reference: 1
Location Of Person: Hangar / Base
Reporter Organization: Personal
Function.Ground Personnel: Other / Unknown
Experience.Flight Crew.Type: 15
ASRS Report Number.Accession Number: 1513565
Human Factors: Situational Awareness

Events
Anomaly.Airspace Violation: All Types
Anomaly.Deviation - Procedural: Published Material / Policy
Anomaly.Deviation - Procedural: FAR
Detector.Person: Ground Personnel
When Detected: In-flight
Result.General: Police / Security Involved
Result.Flight Crew: Became Reoriented

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

Narrative: 1
Together with a friend, we went to the high desert area to do some low-level high speed tests with a DJI drone. Our originally planned area (a BLM (Bureau of Land Management) managed dry lake bed) was closed because of recent rains. We tried to find another suitable area like an open field without obstacles far from structures or people. In doing so, got too close (approximately 2.7 nm) to a private airport. We were intercepted by security and immediately ceased operations upon learning we were too close.

Suggestions:
1) In drone ops, be more alert to nearby airports, even if private fields.
2) Improve DJI location software to reduce false warnings. The software tends to provide alerts to the operator that often are incorrect.

Synopsis

UAV operator reported he was alerted by a private airport company security that he was operating too close to the private airport.
**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.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 then 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 where rated for. It was a combination of new batteries, new software that was more aggressive, and connectors that where 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
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.
**ACN: 1502686 (50 of 50)**

**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.