

**CHAPTER 5**  
**SAFETY**  
**TABLE OF CONTENTS**

<u>OBJECTIVE</u> .....	5-3
<u>GENERAL</u> .....	5-3
Authority .....	5-3
<u>SAFETY POLICY</u> .....	5-3
Responsibilities.....	5-4
<u>HAZARD IDENTIFICATION</u> .....	5-4
<u>RISK ASSESSMENT</u> .....	5-4
<u>ACCIDENT/INCIDENT/HAZARD/OCCURRENCE REPORTING</u> .....	5-4
Definitions.....	5-4
<u>SAFETY MONITORING AND MEASUREMENT</u> .....	5-6
<u>SAFETY PROMOTION</u> .....	5-6
Safety Meetings.....	5-6
Safety Communication .....	5-7
<u>DUTIES AND RESPONSIBILITIES</u> .....	5-7
Office of Air Operations .....	5-7
Small Unmanned Aircraft Systems Coordinator .....	5-7
Small Unmanned Aircraft Systems Remote Pilot in Command .....	5-8
Small Unmanned Aircraft Systems Visual Observer.....	5-8
<u>SAFETY EQUIPMENT</u> .....	5-8
First Aid Kit.....	5-8
<u>FLIGHT RESTRICTIONS</u> .....	5-8
<u>EMERGENCY PROCEDURES</u> .....	5-9
<u>ACCIDENTS, INCIDENTS, AND OCCURRENCES</u> .....	5-9
Small Unmanned Aircraft Systems Accident Reporting.....	5-9
Small Unmanned Aircraft Systems Incident Reporting .....	5-10
Small Unmanned Aircraft Systems Occurrence Reporting .....	5-10
Retention .....	5-11
 <u>ANNEXES</u>	
<u>A</u> – CHP 321A, INCIDENT/HAZARD/OCCURRENCE REPORT .....	5-13
<u>B</u> – SMALL UNMANNED AIRCRAFT SYSTEMS ACCIDENT OR INCIDENT REPORT FORMAT .....	5-15
<u>C</u> – FEDERAL AVIATION ADMINISTRATION SMALL UNMANNED AIRCRAFT SYSTEMS ACCIDENT REPORT .....	5-19

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## CHAPTER 5

### SAFETY

1. OBJECTIVE. The objective of the Small Unmanned Aircraft Systems (sUAS) safety program is to prevent injuries to persons and damage to property, and provide guidance for the safe and efficient operation of sUAS aircraft.
  
2. GENERAL. The Department's sUAS safety program is committed to maintaining a safe workplace for the integration and use of sUAS. The safety program establishes safety as the primary objective in every sUAS operation.
  - a. Authority. The Air Operations Program (AOP) safety coordinator and/or the chief pilots, with the concurrence of the Office of Air Operations (OAO) commander, have the authority to suspend departmental sUAS operations if an unsafe environment or condition exists affecting the program. Flight operations shall not resume until the OAO commander has confirmed identified issues have been resolved and the Assistant Commissioner, Field (ACF) has approved.
  
3. SAFETY POLICY. The sUAS Program is committed to providing safe, healthy, and secure working conditions with the objective of preventing injuries to employees, the public, and damage to state property. The sUAS Program shall be in compliance with Federal Aviation Regulations and/or public law where applicable. Reporting of incidents, hazards, or occurrences shall be through approved sUAS flight management software. The CHP 321A, Incident/Hazard/Occurrence Report, shall be used in the absence of electronic sUAS flight management software. Reporting of incidents, hazards, and occurrences is vital to building and maintaining a safe and efficient sUAS Program. This reporting is in addition to any other reporting which may be required by policy, applicable law, and/or regulation.
  - a. The following safety principles shall be adhered to:
    - (1) Always operate in the safest manner possible.
    - (2) Never take unnecessary risks.
    - (3) Safe does not mean risk-free.
    - (4) Everyone is accountable for the identification of hazards and the associated management of the risks associated with those hazards.

b. No mission is so critical that it would necessitate acceptance of unnecessary risk or require deviation from safety policies, procedures, training standards, or the sound professional judgment of the sUAS operator.

c. Responsibilities. It is the duty of every member within the sUAS Program to contribute to the goal of continued safe operations. Any safety hazard, whether procedural, operational, or maintenance related should be identified as soon as possible. The intentional identification of hazards is vital to properly mitigate the risks associated with those hazards. Any suggestions, in the interest of safety, should be made through the sUAS Division coordinator and forwarded through channels to the OAO safety coordinator.

4. HAZARD IDENTIFICATION. Identification and communication of hazards will improve the level of safety within the sUAS Program. Hazards are conditions that exist in the operational environment that can present the potential for harm to personnel or damage to property or equipment. Thus, hazards are not events.

5. RISK ASSESSMENT. Once hazards are identified in the operational environment, sUAS personnel must assess/evaluate the level of risk associated with the identified hazard and determine the appropriate course of action.

6. ACCIDENT/INCIDENT/HAZARD/OCCURRENCE REPORTING. For incidents and safety hazards, other than an accident, in flight or on the ground, the sUAS remote pilots shall as soon as practical notify the on-duty supervisor, complete the appropriate report located on the approved sUAS flight management software and notify the sUAS Division Coordinator of the occurrence. In the absence of sUAS flight management software, the CHP 321A (Annex A) shall be completed and submitted to the sUAS Division coordinator. The sUAS coordinator shall review, make recommendations, and forward the report to the OAO safety coordinator.

a. Definitions.

(1) Small Unmanned Aircraft Systems Accident. An sUAS accident is defined in Federal Aviation Administration (FAA), Title 14 Code of Federal Regulations (CFR), Part 107.9, as any operation of the sUAS involving at least:

(a) Serious injury to any person or loss of consciousness.

(b) Damage to any property, other than the sUAS, resulting in repair or replacement costs more than \$500.00.

(2) Serious Injury. Serious injury is defined by the National Transportation Safety Board, Part 830.2, as any injury which:

(a) Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received.

(b) Results in the fracture of any bone, except simple fractures of fingers, toes, or nose.

(c) Causes severe hemorrhages, nerve, muscle, or tendon damage.

(d) Involves second- or third-degree burns, or any burns affecting more than five percent of the body surface.

(3) Small Unmanned Aircraft Systems Occurrence. An sUAS occurrence is any event, not amounting to an accident or incident, which may affect the safety of operations. The sUAS operators shall complete the appropriate report located on the approved sUAS flight management software and notify the sUAS Division Coordinator, who shall then notify OAO. In the absence of an sUAS flight management software, the CHP 312A shall be completed and notification shall be made to the Division sUAS Coordinator, who shall then notify OAO.

This includes:

(a) Momentary loss of situational awareness resulting in flight within dangerous proximity to people.

(b) Loss of positive control of the sUAS by the remote pilot, other than with a loss radio signal or signal interference.

(c) Loss of control connectivity or interference resulting in an auto-land operation.

(d) Loss of control connectivity or radio signal interference resulting in an sUAS fly away.

(e) Any violation of FAA, Title 14 CFR, Part 107, or a violation of the conditions of a certificate of authorization or waiver.

(4) Small Unmanned Aircraft Systems Incident. An sUAS incident is any occurrence resulting in injury or property damage, not amounting to an accident, to include damage to the sUAS other than damage which is limited to one or more propellers (e.g., inadvertent start up and laceration to finger). The sUAS remote pilots shall complete the appropriate report located on the approved sUAS flight management software and notify the sUAS Division Coordinator of submission, who shall then notify OAO. In the absence of an sUAS flight management software, the CHP 312A shall be completed, and notification shall be made to the sUAS Division coordinator, who shall then notify OAO.

(5) Small Unmanned Aircraft Systems Safety Hazard. A safety hazard, whether in flight or on the ground, is not an incident/event. The safety hazard is a specific hazard that is identified by the sUAS operator and/or visual observer (VO) that presents the potential for harm to personnel or damage to aircraft or equipment (e.g., power lines).

7. SAFETY MONITORING AND MEASUREMENT. Monitoring and measuring the sUAS Program provides a process to ensure the safety policy is effective, remains relevant, and safety practices are continuously improved upon. To do so, the sUAS Division coordinator shall perform the following:

- a. Review reports submitted on both the flight management software and/or CHP 312A and assist the OAO safety coordinator in determining the appropriate corrective actions.
- b. Conduct semiannual safety inspections of Division or Area sUAS and remote pilots.

NOTE: The results of these inspections shall be kept on file with the sUAS Division coordinator.

8. SAFETY PROMOTION. Safety efforts cannot succeed by mandate alone and are reinforced through effective training, education, and communication. Consistent safety promotion will provide a sense of purpose and help facilitate a positive safety culture within the program. To ensure the highest level of health and safety in the workplace environment, all members of the sUAS Program will be thoroughly and properly trained in accordance with this manual. The following will be utilized to facilitate the promotion of safety in the program.

- a. Safety Meetings. The sUAS Division coordinator shall conduct semiannual safety meetings with regards to sUAS safety, ground operations, flight operations, trends, and other related matters for Division sUAS remote pilots. The minutes of these meetings shall be recorded and distributed to all members within the Division

sUAS Program and routed to the Division commander for review and approval. Copies of approved minutes shall be forwarded to the OAO safety coordinator. When operations allow, the sUAS Division coordinator is encouraged to attend other Division safety meetings.

b. Safety Communication. Communication of the commitment to safety, incident and observation reporting, safety monitoring and measurement, and safety promotion is critical to the overall success of the program. Safety communication aims to ensure all sUAS personnel are fully aware of and convey safety-critical information, explain why particular actions are taken, and explain why safety procedures are introduced or changed. Members of the sUAS Program should be informed of all safety-related issues relative to the program in a timely manner via departmental e-mail. The safety communication system shall include, but not limited to:

- (1) Safety bulletins.
- (2) Safety meeting minutes.
- (3) A safety bulletin board.
- (4) A hazard board.

9. DUTIES AND RESPONSIBILITIES. Responsibility for accident prevention rests with each member of the sUAS Program, OAO, and departmental management. The responsibility for developing, implementing, and evaluating the sUAS Safety Program is assigned to the OAO commander, OAO safety coordinator, sUAS systems coordinator, sUAS remote pilots, and sUAS visual observers.

a. Office of Air Operations. The OAO commander and OAO safety coordinator are responsible for ensuring that the safety policies and procedures outlined in this manual are accomplished.

b. Small Unmanned Aircraft Systems Coordinator. The sUAS coordinator is responsible for monitoring sUAS operations in their Division for possible unsafe practices or conditions, promoting an environment in which safety is the primary consideration during all operations, and consulting with the OAO safety coordinator on safety-related matters. The sUAS coordinator shall:

- (1) Review documented incident/hazard/occurrence reports submitted by sUAS operators.
- (2) Coordinate safety training for Division sUAS Program members.
- (3) Identify and evaluate safety problem areas within Division sUAS operations.
- (4) Provide technical guidance regarding the safety of Division sUAS operations.
- (5) Conduct periodic safety inspections of Division sUAS operators.
- (6) Assist sUAS supervisors with formulating safe operating practices and policies.
- (7) Work with sUAS training pilots to maintain training consistent with mitigating risk.

c. Small Unmanned Aircraft Systems Remote Pilot in Command. The sUAS remote pilot in command (RPIC) is responsible for conducting operations in a safe manner and ensuring all operations comply with the policies outlined in this manual.

d. Small Unmanned Aircraft Systems Visual Observer. The sUAS VO is responsible for observing flight operations and continually evaluating the safety of the operation. If the VO observes any potential safety issues, they shall notify the RPIC and discontinue flight operations if necessary.

10. SAFETY EQUIPMENT. The sUAS Division coordinators, remote training pilots, RPICs, VOs, safety officers, and associated personnel shall have the following safety equipment available during flight operations.

a. First Aid Kit. An appropriately stocked first aid kit shall be accessible during flight operations. A departmentally issued first aid kit, emergency medical technician, emergency medical responder, or paramedic bag satisfies this requirement.

11. FLIGHT RESTRICTIONS. Operational flight restrictions (e.g., special waiver or certificate of waiver or authorization restrictions) shall be documented and reviewed semiannually by the sUAS Division coordinator. Questions concerning restrictions should be directed to the appropriate sUAS Division coordinator.

12. EMERGENCY PROCEDURES. The sUAS personnel shall follow established procedures and policies regarding emergency notifications.

a. The sUAS Division coordinator shall establish an emergency response plan detailing the actions to be taken in the event of the following:

- (1) Death or serious injury to any person or any loss of consciousness.
- (2) Damage to any property, other than the sUAS.
- (3) Any other notifications which may be required by policy, law, or regulations.

13. ACCIDENTS, INCIDENTS, AND OCCURRENCES. Reporting sUAS accidents, incidents, and occurrences is critical to support safety in operations. The FAA requires only the reporting of accidents, as defined in FAA, Title 14 CFR, Part 107.9. All other reporting is departmental.

a. Small Unmanned Aircraft Systems Accident Reporting.

(1) Remote Pilot in Command. The RPIC shall:

(a) Immediately notify the on-scene commander (if applicable), their immediate supervisor, and the sUAS Division coordinator.

(b) Submit an sUAS aircraft systems accident report, via the OAO approved sUAS flight management software, to the sUAS Division coordinator within 24 hours of the accident (Annex B and/or Annex C).

(2) Investigating Officer. The investigating officer shall submit a complete report of the accident to the sUAS Division coordinator within five calendar days of the accident (Annex B).

(3) Division Small Unmanned Aircraft Systems Coordinator. The Division sUAS coordinator shall ensure all reports received are complete and accurate. The Division sUAS coordinator may investigate further and add to the report at their discretion. The Division sUAS coordinator shall forward reports to OAO within five calendar days of final approval.

(4) Office of Air Operations. The OAO shall review all accident reports and forward final reports to ACF. The OAO may investigate further at their discretion.

(a) The OAO shall notify the FAA in accordance with FAA, Title 14 CFR, Part 107, of an operation that meets the criteria outlined in FAA, Title 14 CFR, Part 107.9 within ten calendar days of the incident (Annex C).

b. Small Unmanned Aircraft Systems Incident Reporting.

(1) Remote Pilot in Command. The RPIC shall:

(a) Immediately notify the on-scene commander (if applicable) and their immediate supervisor.

(b) Submit an sUAS aircraft systems incident report, via the OAO approved sUAS flight management software, to the sUAS Division coordinator within 24 hours of the incident. In the absence of an sUAS flight management software, the RPIC shall submit a written summary to the sUAS Division coordinator within 24 hours of the incident.

(2) Investigating Officer. The investigating officer shall submit a complete report of the incident to the Division sUAS coordinator within five calendar days of the incident (Annex B).

(3) Division Small Unmanned Aircraft Systems Coordinator. The sUAS Division coordinator shall ensure all reports received are complete and accurate, and may investigate further and add to the report at their discretion. The sUAS Division coordinator shall forward reports to OAO within five calendar days of final approval.

(4) Office of Air Operations. The OAO shall review all accident reports and forward final reports to ACF. The OAO may investigate further at their discretion.

c. Small Unmanned Aircraft Systems Occurrence Reporting. Departmental remote pilots shall report sUAS occurrences. Occurrence reporting is used to support a “just culture” by emphasizing training and the use of best practices to minimize injury, losses, and liability. Occurrence reports may highlight areas of operation that require changes to policy, training, or potential equipment issues.

(1) Remote Pilot in Command. If the occurrence involved a violation of FAA, Title 14 CFR, Part 107, in an emergency situation, a summary of the occurrence shall be submitted to the sUAS Division coordinator within 24 hours. The summary shall also be submitted to the FAA, if requested, and the sUAS Division coordinator shall be notified of the request. For all other occurrences, a summary of the occurrence shall be submitted to the sUAS Division coordinator within five calendar days of the occurrence.

- (a) If the RPIC believes there is an immediate safety concern, such as potentially faulty equipment, the sUAS Division coordinator shall be notified immediately. If the sUAS Division coordinator is unavailable, notification shall as soon as practical be made through the appropriate chain of command.
- (2) In the event of a nonemergency violation of FAA, Title 14 CFR, Part 107, pilots should consider filing a report online through the National Aeronautics and Space Administration Aviation Safety Reporting System.
- (3) Division Small Unmanned Aircraft Systems Coordinator. The Division sUAS coordinator shall review occurrence reports to ensure they are complete and accurate, and forward them to OAO.
- (4) Office of Air Operations. The OAO shall review all occurrence reports and obtain ACF approval prior to submission to the FAA.
- (5) Use of Occurrence Reports. Commands, Divisions, and OAO should use the information in occurrence reports to improve training programs, policy, and equipment requirements in the interest of safety and operational success.
- d. Retention. Accident, Incident, and Occurrence Reports shall be retained for two years plus current year.

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# ANNEX A

## CHP 321A, INCIDENT/HAZARD/OCCURRENCE REPORT

STATE OF CALIFORNIA  
 DEPARTMENT OF CALIFORNIA HIGHWAY PATROL  
**INCIDENT/HAZARD/OCCURRENCE REPORT**  
 CHP 321A (New 10-24) OPI 018

<h3 style="margin: 0;">Incident/Hazard/ Occurrence Report</h3>		<b>Send to: sUAS Coordinator</b>																							
Incident/Hazard/Occurrence Information (Completed by Employee)	DIVISION:	AREA OFFICE:	EMPLOYEE NAME:	EMPLOYEE ID:																					
	Valley	216	John Smith	123456																					
	Incident/Hazard/Occurrence? <input checked="" type="checkbox"/> Incident <input type="checkbox"/> Hazard <input type="checkbox"/> Occurrence			REPORT DATE/TIME:																					
	Property Damage? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			DATE OF OCCURRENCE:																					
	Injury? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			TIME OF OCCURRENCE:																					
		NATURE OF PROPERTY DAMAGE:																							
		NATURE OF INJURY:																							
Describe the Hazard observed, the details of the Incident, or Occurrence in the box below: The drone, being operated by Officer Smith, landed hard on the roof of the Area office, causing minor scrape damage to the southeast corner of the rooftop.  Officer Smith lost momentary control while flying the drone back to landing in the back lot of the Area office.																									
Risk Assessment (by Employee)	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 40px;">Catastrophic</td> <td style="width: 40px;">Major</td> <td style="width: 40px;">Minor</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td style="font-size: x-small;">Certain to Occur <b>A</b></td> <td style="background-color: red;"></td> <td style="background-color: orange;"></td> <td style="background-color: yellow;"></td> </tr> <tr> <td style="font-size: x-small;">Likely will Occur <b>B</b></td> <td style="background-color: orange;"></td> <td style="background-color: yellow;"></td> <td style="background-color: blue;"></td> </tr> <tr> <td style="font-size: x-small;">May Occur <b>C</b></td> <td style="background-color: yellow;"></td> <td style="background-color: blue;"></td> <td style="background-color: blue; color: white;">3C</td> </tr> </table>		Catastrophic	Major	Minor		1	2	3	Certain to Occur <b>A</b>				Likely will Occur <b>B</b>				May Occur <b>C</b>			3C	Add the letter/number combo in the box that reflects your risk assessment of the situation.  <b>Probability:</b> 1. Catastrophic - will cause significant damage or serious injury or loss of operational capability. 2. Major - will cause damage, injury or significant reduction in ability to conduct operations. 3. Minor - there is concern that minor damage, injury or reduced operations will occur.  <b>Severity:</b> A. Certain to Occur - likely to happen within the next seven days. B. Likely will Occur - likely a factor within the next 30 days. C. May Occur - there is concern that it will occur within the next 12 months.			
		Catastrophic	Major	Minor																					
		1	2	3																					
	Certain to Occur <b>A</b>																								
Likely will Occur <b>B</b>																									
May Occur <b>C</b>			3C																						
List all corrective actions taken and recommendations to mitigate the possibility of a recurrence: <b>To be determined...</b>																									

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## ANNEX B

### SMALL UNMANNED AIRCRAFT SYSTEMS ACCIDENT OR INCIDENT REPORT FORMAT

1. SUMMARY.
  
2. FACTS.
  - a. Date, time, location.
  
  - b. Small Unmanned Aircraft Systems.
    - (1) The sUAS make and model.
    - (2) The FAA registration number.
    - (3) Installed software/firmware versions.
    - (4) Battery charge status (if available).
    - (5) Payload (camera type).
    - (6) Total flight time.
  
  - c. Remote pilot in command.
    - (1) Name, rank, ID number, remote pilot certificate number.
    - (2) Describe injuries, if any.
    - (3) Flight time.
      - (a) Training received (day/night).
      - (b) Remote pilot in command day.
      - (c) Remote pilot in command night.
      - (d) Total.
    - (4) CHP certification due dates.

- (a) Annual day certification.
  - (b) Annual night certification.
- (5) Remote pilot certificate expiration date.
- d. Visual observer (if not using a VO, state “none”).
  - (1) Name, rank, ID number.
  - (2) Certified remote pilot (yes/no).
  - (3) Describe injuries, if any.
- e. Other involved parties (other than witnesses).
  - (1) Name.
  - (2) Address.
  - (3) Telephone number.
  - (4) Date of birth/age.
  - (5) Location.
- f. Brief description of injuries, if any.
- g. Witnesses.
  - (1) Name.
  - (2) Address.
  - (3) Telephone number.
  - (4) Date of birth/age.

- h. Scene description.
  - (1) Scene at original sUAS operation.
  - (2) Scene at point of rest (if different).
- i. Weather at scene.
  - (1) Lighting conditions.
  - (2) Cloud cover.
  - (3) Visibility.
  - (4) Wind direction/velocity.
  - (5) Obstructions to vision (e.g., haze, smoke, fog).
  - (6) Precipitation.
  - (7) Temperature.
  - (8) Source of weather information.
- j. Other pertinent information (if applicable).
- k. Injuries (detailed narrative).
- l. Damage description to sUAS (narrative).
- m. Damage description to other property (narrative).
- n. Photograph/video log.
- o. Other evidence (if applicable).

3. STATEMENTS.

- a. Pilot.
- b. Visual observers.
- c. Other parties.
- d. Witnesses/other (if applicable).

**NOTE: Opinions and conclusions may be completed by Division or OAO (if necessary).**

4. OPINIONS AND CONCLUSIONS.

- a. Findings.
- b. Primary cause.
- c. Contributive cause(s).

5. RECOMMENDATIONS.

## ANNEX C

### FEDERAL AVIATION ADMINISTRATION SMALL UNMANNED AIRCRAFT SYSTEMS ACCIDENT REPORT

If the accident meets the previously described thresholds, report the following key information to FAA.

Category	Required Information
Remote PIC Information	<ul style="list-style-type: none"><li>• Name</li><li>• Contact Information</li><li>• FAA Airman Certificate Number</li></ul>
Aircraft Information	<ul style="list-style-type: none"><li>• Registration Number (N-number or unique identifier issued in accordance with 14 CFR part 48)</li></ul>
Accident Information	<ul style="list-style-type: none"><li>• Location of the Accident</li><li>• Date and Time of the Accident</li><li>• Person(s) Injured and Extent of Injury (if any or known)</li><li>• Property Damaged and Extent of Damage (if any or known)</li><li>• Description of What Happened</li></ul>

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