CHAPTER 5

AVIATION SAFETY

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CHAPTER 5

AVIATION SAFETY

1. GENERAL. The Department's aviation safety program is a Safety Management System (SMS) based program. This system is integrated into every facet of the Air Operations Program (AOP) and establishes safety as the first priority. The SMS defines the safety culture to include every member of the program and their responsibility to operate in the safest manner possible in their day-to-day operations.

a. A SMS is essentially a quality management approach to controlling risk. It provides the organizational framework to construct and support a sound safety culture that actively controls its risk exposure. The Department's SMS employs safety strategies and practices by developing and implementing a structured management system to control risk and meet the legal responsibilities in aviation operations.

b. Objective. The objective of the SMS is to prevent injuries to persons and damage to property. The SMS shall comprehensively examine the functions of the AOP and the operational environment to identify hazards and to analyze associated risks. These functions include the organizational structure, processes and procedures, as well as the people, equipment, and facilities used to accomplish the mission of the AOP. Every member of the AOP has the right to expect a safe place in which to work and to be provided with an aircraft and equipment to do the job safely.

c. Authority. The AOP safety coordinator, with the concurrence of the Office of Air Operations (OAO) commander, has the authority to suspend departmental or unit flight operations if an unsafe environment or condition exists. Flight operations shall not resume without the approval of Assistant Commissioner, Field (ACF), with the recommendation of the OAO commander.

d. Structure and Organization. There are four components comprising the SMS for the AOP; each is an essential piece of a comprehensive safety-oriented management system. All SMS requirements and activities within the AOP will have a relationship to these four components:

(1) Safety policy.

(2) Safety risk management.

(3) Safety assurance.

(4) Safety promotion.

2. SAFETY POLICY. The Department's AOP will support the mission of the CHP while operating in a manner that continuously promotes safety as the highest priority. The AOP is committed to providing safe, healthy, and secure working conditions with the objective of preventing injuries to employees and damage to state property. The AOP is committed to the implementation and continuous improvement of an effective SMS. The Department's SMS shall be in compliance with Federal Aviation Regulations and/or public law where applicable and aligned with applicable airborne law enforcement standards. The principles of a just culture, a fair environment in which hazard reporting is deemed vital to a safe and efficient program, shall be followed. This encourages open reporting of all hazards in which management will not initiate disciplinary action against any personnel who, in good faith, discloses a hazard or safety occurrence due to unintentional conduct. It is understood that familiarity and prolonged exposure without a mishap leads to a loss of appreciation of risk. Accordingly, the following principles shall be embraced: always operate in the safest manner possible, never take unnecessary risks, safe does not mean risk-free, and everyone is accountable and responsible for the identification and management of risk. Finally, no mission is so critical that it would necessitate acceptance of unnecessary risks or require deviation from safety policies, procedures, training standards, or the prudent judgment of the aircrew.

3. SAFETY RISK MANAGEMENT. Throughout the risk management process, hazards are identified; risks are analyzed, assessed, and prioritized; and results documented for decision-making. The safety risk management process shall not preclude AOP personnel from taking immediate action to eliminate or mitigate existing risk when urgent action is required.

a. Hazard Identification and Analysis. From a reporting perspective, a hazard is anything that the employee feels is a threat to the safety of people or resources of the Department. When hazards and events are reported, safety is enhanced.

(1) All members of the AOP are charged with the responsibility to report any safety observation (hazards) or incident (events) they experience. Reporting safety observations and incidents facilitates the collection of event data to assist in the identification of "underlying problems," so that appropriate measures (i.e., training and/or establishment or modification of procedures) can be implemented.

(2) No reprisal or discriminatory actions will be brought against any employee who communicates safety observations or incidents. The AOP fosters a philosophy of a just culture; however, any reported event that has the reasonable appearance of criminal activity, intentional misconduct, or willful negligence will be investigated in accordance with the provisions outlined in

Highway Patrol Manual (HPM) 10.2, Internal Investigations Manual. To formalize safety observation and incident reporting, the following requirements are established for the AOP:

(a) Reports shall be submitted using the AOP's online SMS software, as authorized by the OAO.

(b) Reports should be clear, concise, and contain all necessary information.

(c) Reports may be submitted anonymously, but employees are encouraged to include their name on the reports to allow for follow-up questions and feedback.

(d) Safety observation and incident reports submitted via the online SMS software will be automatically routed to the aerial supervisor and the unit safety officer for appropriate action.

(e) Reported observations and incidents should be evaluated by the aerial supervisor or unit safety officer within 72 hours. For reports of a severe nature, it is expected employees will notify their supervisor that immediate action may be required.

(f) A safety investigation shall be conducted for all serious safety observation and incident reports. The purpose of the investigation will be to determine the root cause and implement the appropriate corrective actions.

b. Safety Risk Assessment and Mitigation. In keeping with departmental policy and ensuring the highest margin of safety is maintained, safety risk assessment and mitigation is an essential element of the primary goal of the SMS. To determine and analyze the risk factors related to the severity and probability of potential events associated with known hazards and identify appropriate risk mitigation strategies, the AOP shall utilize the following tools:

(1) Risk Assessment Tool. The Risk Assessment Tool (RAT) is the formal process to identify, assess, and calculate an overall level of risk associated with a reported or potential hazard. The RAT utilizes a risk assessment matrix to identify the severity and probability of a reported or potential hazard and determines when to elevate the decision for risk acceptance to a higher level.

(a) Analysis from the RAT will assist crew members in determining whether the risk is acceptable or unacceptable. This process also provides direction in developing mitigation measures to reduce the risk to as low as reasonably practical.

(b) The RAT, which articulates mitigation measures and corrective actions, will be tracked through the AOP's online SMS software. To ensure the effectiveness of the mitigation measures and corrective actions, they should be discussed during the OAO Safety Committee (OAOSC) and Division Air Unit Safety Committee (DAUSC) meetings, as appropriate.

(2) Flight Risk Analysis Tool. All flight operations conducted by the AOP have potential hazards and some level of risk associated with them. The Flight Risk Analysis Tool (FRAT) is a tool to be used by crew members to bring an awareness of the risks faced while operating departmental aircraft. It is critical that crew members are able to analyze, in advance, risks associated with any proposed mission using a RAT.

(3) To formalize risk analysis procedures and documentation, the following procedures are established:

(a) The OAO is responsible for the drafting and standardization of the FRAT.

(b) Only FRATs authorized by OAO will be used by the AOP.

(c) It is expected the FRAT will require modification. To ensure its effectiveness, the FRAT should be reviewed by the OAO quarterly, or at other more frequent intervals, as necessary.

(d) Crew members shall complete a FRAT at the beginning of their shift as part of the preflight briefing in the context of the first flight to be conducted.

(e) Crew members should complete additional FRATs during their shift when conditions and/or missions significantly change and time and circumstances allow the completion of the FRAT.

4. SAFETY ASSURANCE. Safety assurance provides a structured process to ensure risk controls remain relevant and effective, and that safety practices are continuously improved upon.

a. Safety Performance Monitoring and Measurement. Safety management within the AOP requires feedback on safety performance to complete the safety management cycle. To ensure the effectiveness of safety risk controls and assess system performance, the OAO shall ensure the following are accomplished:

(1) Track and measure the accomplishment of the AOP safety objectives at least quarterly and ensure they are current.

(2) Track and measure the accomplishment of each mitigation method.

(3) Conduct an annual safety audit of the AOP. This audit should be a systems analysis to determine if all areas of the program are functioning properly and the SMS is effective. The safety audit may be accomplished in conjunction with unit evaluations as described in Chapter 2, Operations, of this manual. Findings and corrective actions from the safety audit will be documented and results given to the OAO commander, safety committee, and available for all personnel to review.

(4) Quarterly safety inspections are being conducted by Division air operations units.

(a) Safety inspections shall be conducted by unit safety officers on a quarterly basis utilizing the CHP 93P, Division Air Unit Safety Inspection.

(b) The results of these inspections shall be forwarded to the OAO safety coordinator with any necessary corrective actions taken.

(5) Contractor activities in air operations units should be monitored on a regular basis and inspected annually to ensure compliance with the expected standard. Refer to Chapter 6, Inspection and Maintenance, of this manual.

b. Management of Change. The evolutionary process of change in law enforcement aviation is inevitable. Therefore, it is incumbent on the Department to establish a process by which changes that take place within the AOP are managed in a way that risks are identified and mitigated and the overall effectiveness and safety of the program are not compromised. When changes in operational procedures, processes, training, documentation, equipment, or any other significant change is implemented, the following shall be adhered to:

(1) Use a change management form.

(2) Include all individuals affected by the change and ensure they have an opportunity to review the change and provide their comments.

(3) Conduct the appropriate risk assessments of the recommended changes.

(4) Determine who is responsible for approving the change.

c. Continuous Improvement of the Safety Management Systems. The AOP will promote continual improvement of its SMS through recurring application of Safety

Risk Management and Safety Assurance, and by using safety lessons learned and communicating them to all personnel. To accomplish this, an annual SMS evaluation shall be conducted. The SMS evaluation shall include, but not be limited to:

(1) Safety audits.

(2) Safety surveys.

(3) Safety inspections.

(4) Unit safety officers in conjunction with the OAO safety coordinator shall provide the OAO commander with an annual update on the accomplishments of the SMS. This can include:

(a) Accomplishment of performance objectives.

(b) Accomplishment of actions taken following the annual safety audit.

(c) Accomplishment of actions taken following routine safety inspections.

(d) The return of investment assessment.

5. SAFETY PROMOTION. A safety program cannot be successful if it only includes mandates and strict implementation of policy. A successful safety program is achieved through effective training, education, and communication. Safety promotion provides a sense of purpose and direction, helping to facilitate a positive safety culture within the AOP. In order to ensure the highest level of health and safety in the workplace environment, all members of the AOP will be thoroughly and properly trained. The following will be utilized to facilitate the promotion of safety in the AOP:

a. Safety Meetings. The unit safety officer shall conduct quarterly safety meetings with regard to aviation safety, ground operations, and other related matters. The minutes of those meetings shall be recorded and distributed to all members within the unit, with copies forwarded to each Division and OAO. When operations allow, the unit safety officer is encouraged to attend other air operations unit safety meetings.

b. Annual Safety Conference. The OAO should coordinate a programwide safety conference, on a biennial basis, for the AOP.

c. Safety Communication. Communication of the program's SMS objectives and procedures to all personnel is critical to the overall success of the operation. Safety communication aims to ensure all staff are fully aware of the SMS, convey

safety-critical information, explain why particular actions are taken, and explain why safety procedures are introduced or changed. Members of the AOP should be kept informed in a timely fashion of all safety-related issues relative to the AOP via e-mail and by the online SMS software authorized by the OAO. The safety communications system shall include, but not be limited to:

(1) Safety bulletins.

(2) Safety reading file.

(3) Safety committee meeting minutes.

(4) Safety library.

(5) Safety bulletin board.

(6) Hazard board.

(7) Hazardous material list.

d. Safety Management Systems Indoctrination and New Employee Safety Orientation Training. Safety indoctrination training shall be provided to all members of the air operations unit and shall address the purpose of the SMS, individual responsibilities, and general hazards associated with unit operations. This training shall also be provided to new personnel joining the AOP prior to completing their appropriate phase training and assuming their official duties. This training shall be documented and kept on file at the unit level for all members.

6. DUTIES AND RESPONSIBILITIES. Responsibility for accident prevention rests with each member of the AOP, unit safety officers, and departmental management. The responsibility for developing, implementing, and evaluating the safety program is assigned to the OAO commander, safety coordinator, aerial supervisors, and unit safety officers.

a. Aerial Supervisor/Management Responsibilities. Consistent with the provisions of National Transportation Safety Board, Part 830.2, aerial supervisors and departmental managers who cause or authorize a departmental aircraft flight, or are tasked with supervising Divisions or units wherein flight operations are being conducted, are by definition an operator of the aircraft. Aerial supervisors and managers are responsible for ensuring the SMS principles, policies, and procedures outlined in this manual are accomplished.

b. Unit Safety Officer. The unit safety officer is responsible for monitoring the air operations unit for possible unsafe practices or conditions, promoting an

environment in which safety is the primary consideration during all operations, and consulting with the aerial supervisor, special services commander (SSC), and Division commander concerning aviation safety-related matters. The unit safety officer has direct communication with the OAO safety coordinator. The unit safety officer shall:

(1) Successfully complete formal SMS training.

(2) Report directly to the aerial supervisor.

(3) Manage the air operations unit's hazard reporting program.

(4) Coordinate safety training for members of the air operations unit.

(5) Identify and evaluate safety problem areas within the air operations unit.

(6) Review occupational safety and health administration notices and disseminate information.

(7) Provide technical guidance when safety is a factor in program operations and training.

(8) Review the hazards submitted via the SMS and assist aerial supervisors in determining appropriate corrective actions.

(9) Conduct periodic safety inspections of air operations units.

(10) Conduct quarterly air operations unit safety meetings, DAUSC meetings and safety briefings.

(11) Review incident and accident reports for the purposes of preventing mishaps.

(12) Assist aerial supervisors in formulating safe operating practices and policies.

(13) Develop risk control measures (interventions) based on the SMS process.

(14) Work with unit instructor pilots to develop training consistent with risk control measures.

(15) Selection. Safety officer(s) positions will be appointed by the Division commander with the concurrence of OAO and ACF; this should be the only ancillary duty held by the individual. Newly appointed safety officers shall have a minimum of two years' experience within the AOP. A waiver to the minimum

two years' experience shall be considered and approved only with the concurrence of OAO.

(16) Safety Officer Training. Each air operations unit shall have at least one safety officer. The safety officer will be provided with specialized training regarding aviation safety and human factors in aviation. The training will be coordinated through OAO.

7. THE OFFICE OF AIR OPERATIONS SAFETY COMMITTEE. The purpose of the OAOSC is to provide recommendations to the OAO commander on operational and safety issues. In its efforts, the committee is working towards an accident-free operation by formulating annual goals and objectives for the AOP. The committee shall meet at least quarterly, have a written agenda, and keep and disseminate meeting minutes.

a. Safety Committee Members. The OAOSC shall be comprised of the following:

(1) The OAO commander.

(2) Safety coordinator.

(3) Accreditation officer.

(4) Airplane chief pilot.

(5) Helicopter chief pilot.

(6) Chief flight officer.

(7) Airplane maintenance officer.

(8) Helicopter maintenance officer.

(9) Paramedic coordinator.

(10) Other members, as needed.

b. Responsibilities. The OAOSC shall be responsible for the following:

(1) Develop goals and objectives for the AOP on an annual basis.

(a) The goals and objectives shall be reviewed and updated quarterly or as they are accomplished.

(b) The goals and objective shall be documented on a CHP 51, Memorandum, and disseminated to members of the OAOSC.

(2) Utilize the AOP's SMS safety incident and safety observation reports, FRATs, risk assessments, etc., to identify hazards and mitigate risks.

(3) Review AOP procedures for their effectiveness relative to aviation safety.

(4) Review incident and accident reports and provide recommendations to the OAO commander.

(5) Other duties as assigned by the OAO commander.

8. DIVISION AIR OPERATIONS UNIT SAFETY COMMITTEE. The purpose of the DAUSC is to provide recommendations to the SSC and the OAOSC on operational and safety issues. The committee is responsible to formulate Division-specific annual safety goals and objectives for the Division air operations unit. When formulating Division air operations unit safety goals and objectives, the DAUSC shall incorporate the annual safety goals and objectives published by the OAOSC, as applicable. The DAUSC shall meet at least quarterly, have a written agenda, and keep and disseminate minutes of the meeting.

a. Safety Committee Members. The DAUSC shall be comprised of the following:

(1) Aerial supervisors.

(2) Safety officer.

(3) Airplane training pilot.

(4) Helicopter training pilot.

(5) Airplane training flight officer.

(6) Helicopter training flight officer.

(7) Airplane maintenance officer.

(8) Helicopter maintenance officer.

(9) Emergency medical services officer.

(10) Other members, as needed.

b. Responsibilities. The DAUSC shall be responsible for the following:

(1) Develop safety goals and objectives for the Division air operations unit on an annual basis.

(a) The safety goals and objectives shall be reviewed and updated quarterly or as they are accomplished.

(b) The safety goals and objectives shall be documented on a CHP 51, published in the unit's SMS safety locker and disseminated to the following:

1 The Division SSC.

2 The DAUSC members.

3 Division air operations unit members.

4 The OAO safety coordinator.

(2) Utilize the AOP's SMS safety incident and safety observation reports, FRATs, risk assessments, etc., to identify hazards and mitigate risks.

(3) Review Division air operations unit Standard Operating Procedures (SOP) and AOP procedures for their effectiveness relative to aviation safety.

(4) Review incident and accident reports and provide recommendations to the OAOSC.

(5) Other duties as assigned by the aerial supervisors.

9. SAFETY EQUIPMENT. The safety officer, Aviation Life Support Equipment (ALSE) officer, crew members, and aerial supervisors shall ensure that all required safety equipment and ALSE is utilized during flight operations.

10. AVIATION LIFE SUPPORT EQUIPMENT.

a. Unit Aviation Life Support Equipment Officer. The ALSE officer will be appointed by the Division commander with the concurrence of the OAO and ACF. The ALSE officer shall be responsible for maintaining and inspecting ALSE; this includes ordering ALSE, maintaining accountability of the items, inspecting/maintaining equipment as needed, and acting as the liaison with the OAO ALSE coordinator.

b. Aviation Life Support Equipment Requests/Ordering. Aviation Life Support Equipment shall be issued to all crew members to enhance safety during both routine operations and emergencies. Requests for ALSE will be coordinated by contacting OAO.

(1) Flight suits and flight jackets.

(2) Miscellaneous ALSE.

(3) Flight helmets.

c. Aviation Life Support Equipment Assignment (Crew Members). The following ALSE is to be issued to each crew member (pilot and flight officer) upon final completion of all phase training as outlined in Chapter 4, Training, of this manual:

(1) Three flight suits.

(2) One flight jacket.

(3) One flight helmet.

(4) Two pair flight gloves.

(5) Two name tags.

(6) One helmet bag.

(7) Two skull caps.

(8) One lip light.

(9) One Leatherman tool.

(10) One small survival pouch.

(11) One small signal mirror.

(12) One survival blanket.

(13) One container of survival matches.

d. Aviation Life Support Equipment Assignment (Non-Crew Members). The following ALSE may be issued to personnel not on flight status (e.g., SSC, special services lieutenant, nonflying aerial supervisor). The minimum ALSE issued will consist of the following:

(1) One flight suit.

(2) One flight jacket.

(3) One name tag.

(4) One pair flight gloves.

e. The following ALSE shall be worn during flight operations by all crew members except when otherwise authorized by OAO:

(1) Nomex flight suit. Sleeves shall be secured at the wrist with hook-and-pile material. The Nomex flight jacket shall be worn in the same manner when weather conditions require its use.

(2) Cold weather jumpsuit. The optional cold weather jumpsuit shall be worn over the nomex flight suit when weather conditions require its use.

(3) Nomex flight gloves.

(4) Flight boots.

(5) Name tag.

(6) Flight helmet.

(a) Helicopter. A flight helmet shall be worn during flight operations by all helicopter crew members. When a helmet is worn, the visor should be down.

(b) Airplane. Crew members shall wear either a flight helmet or a headset during flight operations. When a helmet is worn, the visor should be down.

1 Airplane crew members may elect to wear a helmet or a headset as appropriate for the mission being performed.

2 Airplane crew members should wear a flight helmet during low level missions requiring flight below 1,000 feet above ground level and during moderate-to-severe turbulence.

(7) Ear plugs.

(8) Flotation equipment while engaged in operations over significant bodies of water.

(9) Small survival pouch. The pouch shall be worn in the leg pocket of the flight suit and contain the following: small signal mirror, survival blanket, and matches. Additionally, a Leatherman tool shall be carried by each crew member.

f. Air operations units may need to supplement this equipment to meet the specific needs of their operational environment.

g. No alterations, additions, or substitutions may be made to any ALSE without the prior approval of OAO.

h. Short-Term Operations. Certain short-term operations dictate the removal of portions of the required equipment, but should not be considered a means to avoid the proper wearing of required equipment during routine operations. An example of this is flight officers removing their helmets and gloves while performing emergency medical services in the helicopter.

i. The unit SOP should clearly identify those missions which permit the removal of ALSE and what required ALSE item(s) can be removed.

j. Each crew member shall carry a personal flotation device (PFD) on board the aircraft. Any exceptions to carrying the PFD on board the aircraft shall be incorporated into the Division air unit SOP.

(1) Aviation flotation/survival vest equipment location should be standardized within the unit.

(2) Flotation bladders shall be manually inflated and inspected semiannually.

(3) Vests shall be inspected semiannually during quarterly safety meetings.

(4) Helicopter emergency egress device (HEED) bottles shall be inspected annually.

k. Replacement and Inventory. Replacement and inventory of standard-fitting (noncustom) ALSE is as follows:

(1) Items should be on an “as needed” basis. The OAO ALSE coordinator will requisition equipment issued to the unit and to each crew member.

(2) The ALSE inventory database maintained at OAO will function as a permanent record for each item of equipment issued to the unit and to each crew member.

(3) The unit ALSE officer shall establish and maintain a file for each unit crew member. This record should indicate ALSE item dates of issue and deletion. This information shall be forwarded to the OAO ALSE coordinator.

(4) Inspection checklist forms for the CHP 390, Flight Helmet Inspection Checklist; CHP 399, Flotation Vest Inspection Checklist; and CHP 419, HEED Bottle Inspection Checklist, are to be retained by the unit ALSE officer. (Refer to Annexes A, B, and C.)

(5) All ALSE assigned to crew and non-crew members will be inventoried and returned to unit stock or OAO at the time of separation from the AOP.

l. Flight Helmets.

(1) Aviation life support equipment officers will coordinate the purchases of helmets for new personnel with the OAO ALSE coordinator. Only approved helmets will be issued to crew members.

(2) The ALSE officer will confer with the OAO ALSE coordinator to determine if a helmet needs refurbishment.

(3) All flight helmets will be inventoried and returned to unit stock or the OAO at the time of separation from the AOP.

(4) All flight helmets shall be inspected every six months using the CHP 390. (Refer to Annex A.)

(5) The following modifications are authorized. All other modifications to flight helmets, to include unauthorized markings/stickers, are prohibited unless approved by the OAO.

(a) United States flag decal.

(b) Sticker with crew member name.

(c) State property tag.

(d) Marking tape in a plus (+) sign for external load operations as indicated in Chapter 11, Helicopter External Load Operations, of this manual.

(e) Night vision goggles (NVG) and mounts. Neck cord attached to the NVG shall be used as designed by the manufacturer.

(f) Microphone lip light.

(g) Maxillofacial shield with mounting hardware for external load operations as indicated in Chapter 11 of this manual.

(h) Camera designed for rugged outdoor use (e.g., GoPro™ brand cameras).

1 Camera use and mounting shall be approved by the aerial supervisor.

2 The respective special services commander and aerial supervisor are responsible for ensuring air units adhere to applicable policy.

3 At a minimum, the use and retention of footage shall be governed by General Order 110.8, Processing and Storage of Digital Media, paragraph 4.c.

4 Divisions may develop stricter policies regarding use and retention of video footage in their air unit SOP.

5 Cameras shall only be attached using a NVG mounting plate designed to secure the camera. The mounting plate shall be of the type that secures to the helmet and not of the type that clips in place of NVGs. No other mounts are authorized. An example is depicted in Figure 1:

Figure 1

6 Cameras shall have a secondary attachment point via lanyard or tether. The purpose of the secondary attachment point is to reduce the risk associated with the camera falling as well as the potential of losing the camera.

m. Survival Packs. Survival packs shall be inspected annually to ensure batteries and outdated equipment are replaced.

n. Flight Boots. Refer to HPM 73.5, Uniform/Grooming and Equipment Standards, Chapter 7, Regulations for Specialized Uniform Items, for specifications and purchasing.

o. Undergarments. Each crew member shall wear 100 percent cotton undergarments while performing flight duties. No synthetic materials are to be worn.

p. External Load/Rescue Harness. Harnesses shall be approved by the OAO prior to the deployment. Each air operations unit shall have an external load officer who is responsible for inventory and maintenance of all external load/rescue equipment. Refer to Chapter 11 of this manual.

q. Flotation/Survival Vest. The wearing of the flotation vest shall take precedence over the wearing of the survival vest.

11. REQUIRED SAFETY TRAINING. All crew members shall complete the following required training:

a. Helicopter Emergency Egress Device Training. As outlined in Chapter 4 of this manual.

(1) The HEED training is to be completed during pilot/flight officer phase training and every five years thereafter. Helicopter emergency egress device training is designed to educate and familiarize both helicopter and airplane crews in the procedures and techniques used in surviving water-based forced landings. The course will specifically demonstrate and provide guidance for the use of HEED or “spare air” as it is known in the civilian diving community.

(2) Flight crews are required to successfully complete this training by participating in a classroom and pool exercise. The pool participation shall encompass five evolutions utilizing the aquatic survival simulator. Successful completion of evolutions one, two, and three is required for HEED training certification.

b. Physiological Training (Altitude). The purpose of this training is to familiarize and expose each crew member with the environmental changes aviation can pose on human physiology as it relates to atmospheric changes (altitude). This training is coordinated by OAO and shall be completed during pilot/flight officer training and every five years thereafter.

c. Survival Training. This training is coordinated by each individual air operations unit. Survival training shall be completed at a minimum every five years or less.

Office of Air Operations shall be notified via e-mail with the list of attendees, type of survival training, and date accomplished.

12. FLIGHT RESTRICTIONS.

a. Operational Flight Restrictions. Operational flight restrictions (e.g., restricted from off-airport landings, density altitude limitations) shall be posted on the crew status board in the air operations unit. Aerial supervisors are to review, at least quarterly, any operational flight restrictions imposed upon crew members within their unit. Questions concerning restrictions should be directed to the appropriate chief pilot.

b. Flight Restrictions Due to Outside Factors.

(1) General.

(a) Department pilots are expected to maintain physiological and psychological fitness in order to perform their duties. A current Federal Aviation Administration (FAA) Class II medical certificate is required to maintain flight status.

(b) Apart from pathological conditions, fitness may be adversely affected by a variety of outside factors, the effects of which may be hardly perceptible, and therefore negligible in everyday activities. However, these same factors may have a considerable affect on crew efficiency.

(2) Responsibility.

(a) Any crew member who has been treated by a medical doctor shall report this immediately to the aerial supervisor. If there is any question regarding the crew member's ability to safely perform flight duties, the aerial supervisor shall not allow the crew member to perform flight duties until a written clearance from an FAA-approved medical examiner is received.

(b) Crew members that have taken medication, received immunizations, provided blood donations, or been involved in a decompression experience, as specified in this chapter, shall not be permitted to perform flight duties in departmental aircraft until the minimum time frames and/or conditions noted in section 12.b.(3) have been met.

(c) It is the responsibility of the crew member to ensure all medications being taken are approved by the FAA for use while serving as a flight crew member.

(3) Outside Factors.

(a) Drugs. Crew members taking drugs which have a systemic effect will be restricted from flight duties until convalescence and/or rehabilitation is completed. If there is any question as to what drug can be taken while performing flight duties, the crew member/aerial supervisor should consult an approved FAA medical examiner. Individuals receiving the following drugs or types of drugs will be restricted from flight duties as indicated:

1 Alcohol. No crew member shall act as a crew member of a departmental aircraft whenever an alcoholic beverage has been consumed within the preceding 12 hours.

2 Barbiturates. For the period they are taken and for 24 hours after discontinued use, or following any after effects, whichever is longer.

3 Mood Enhancing, Tranquilizing, or Calming Drug. For the period they are used and for four weeks after discontinued use. When medications are utilized for non-mind-affecting reasons (e.g., symptomatic relief of vomiting or muscle spasm), the period of disability will last only for the duration of the acute illness and for 72 hours after cessation of medication. If there are any questions related to the use of such drugs, the crew member/aerial supervisor should consult an approved FAA medical examiner.

c. Medical Restrictions. Medical restrictions from flight duty will be for a minimum period of 12 hours following all immunizations, except for smallpox, and for the duration of any symptomatic or severe local reactions.

d. Blood Donor. Crew members will not be regular blood donors. Following blood donation (200cc or more), crew members will be restricted from flight duty for a period of 72 hours.

e. Scuba Diving/Decompressed Air Dives. The incidence of decompression sickness during flight is considerably increased after exposure to any environment above atmospheric pressure, such as scuba diving. Crew members shall not conduct departmental flight operations within 24 hours following scuba diving or compressed air dives. Decompression sickness symptoms occurring during or after diving imposes a ban on flying until cleared for duty by an FAA-approved medical examiner.

f. Fatigue/Illness. Crew members experiencing excessive fatigue or any illness shall not perform flight duties until fully recovered from the condition.

g. Notification. If any crew member has any of the above mentioned problems, or any other problem that would alter their abilities to perform flight duties, they will be responsible for reporting the same to an aerial supervisor or the unit safety officer. If the safety officer is notified first, they will notify the aerial supervisor or SSC.

13. DUTY HOURS AND REST REQUIREMENTS.

a. Flight Crew. A crew member is defined as a qualified person performing duties in a departmental aircraft as either a pilot or flight officer.

b. Rest Period. A rest period is defined as ten hours, uninterrupted by the Department, from the time a crew member's shift time ends and the time the crew member returns to begin the new shift. This is to minimize the likelihood of aircrew fatigue during aviation operations.

c. Duty Time. Crew members will generally be limited to 12 hours of on-duty time in a work day period. A "work day," as defined in HPM 10.3, Personnel Transactions Manual, Chapter 28, Attendance Reporting, shall commence at the start of the employee's work shift and end 24 hours later. Due to operational necessity, it may become necessary for a crew member to work in excess of 12 hours of duty time in a work day. Crew members shall obtain approval from a supervisor when exceeding 12 hours of duty time. **Consideration should be given not to exceed 14 hours of duty time in a work day.**

d. Flight Time. Crew members shall not exceed eight hours of actual flight time in a same work day period.

e. Call Out. A work day and on-duty time resulting from a call out begins at the time the employee leaves their residence. If a crew member is called back to work within the same work day, the total duty hours, rest periods, and flight time limitations apply.

f. Unscheduled Overtime. If a crew is required to work unscheduled overtime and the total shift time will exceed the 12 hours of on-duty time, they shall get the **approval from an aerial supervisor not to exceed 14 hours**. The total flight time shall be limited to eight hours.

g. Shift Scheduling. During scheduling, supervisors should minimize shift changes and try to keep crew members on the same shift start time for the entire scheduling period. Crew members shall not be scheduled for shift changes (e.g., evening or night shift to day shift) that require the crew member to perform flight duties within ten hours from the end of the previous shift.

h. Voluntary/Assigned Overtime. If a crew member works an assigned or voluntary overtime detail, the crew member shall also comply with duty time, flight time, and rest requirements.

i. Crew members unable to comply with the provisions of this policy shall immediately notify their aerial supervisor or SSC.

14. CREW ENDURANCE. Stress and fatigue caused by flight operations is dependent upon the conditions and type of flying being performed (i.e., day, night, instrument, or NVG), and will vary from each unit. The stress and fatigue experienced can be equated by taking the actual time flown and multiplying by the Environmental Relative Factor. The chart below defines the Environmental Relative Factor associated with various types of flying conditions and shall serve as an informational guide.

a. Environmental Relative Factor.

Condition	Hour
Day	1.0
Night	1.4
Instrument	1.4
NVG	2.0

Example. If a crew flies 1.0 hour during a day instrument flight, that flight is equivalent to 1.4 hours of normal flight (day visual flight rules). If the crew flies 1.0 hour using NVGs, that flight is equivalent to 2.0 hours of normal flight.

b. Crew Endurance Guide. Crew endurance is an integral part of the overall risk management program. It is used to control risks due to sleep deprivation or fatigue and to prescribe thresholds to trigger command decisions whether to accept those risks.

Time Period (hours)	Maximum Duty Time	Maximum Flight Time
24	14	8
48	28	16
72	42	24
168 (7 days)	98	56

15. EXTENDED AIRCRAFT DEPLOYMENT.

a. The purpose of having an established aircraft deployment matrix is to track crew member duty and flight times during extended deployment, in which multiple departmental aircraft and crews are involved (e.g., natural disasters, riots, conventions). The matrix will also monitor the crew's endurance in an attempt to prevent fatigue.

b. This procedure shall be utilized and maintained by the designated safety officer using the CHP 409A, Extended Aircraft Deployment Matrix. (Refer to Annex D.) Times depicted in Annex D represent maximum flight and duty times for a consecutive 15-day extended aircraft deployment. The cumulative flight and duty times in the matrix have been adjusted downward in an attempt to reduce potential long-term accumulation of fatigue factors associated with an extended deployment.

c. The incident commander and safety officer shall work in concert to maintain integrity of the program. Crew members should not work in excess of seven consecutive 12-hour shifts without a full 24-hour rest and recovery period. Refer to Chapter 7, Disaster and Emergency Operations, of this manual.

16. HEARING CONSERVATION PROGRAM.

a. Purpose. The purpose of the Hearing Conservation Program is to establish departmental policy and procedures regarding protection for all employees against the effects of noise exposure as much as practicable.

b. Authority. California Code of Regulations, Title 8, General Industry Safety Orders 5095 through 5100, mandate the control of noise exposure and the establishment of a continuing, effective Hearing Conservation Program for employees exposed to noise levels which equal or exceed 85 decibels. Refer to HPM 10.6, Occupational Safety Manual, Chapter 9, Hazardous Conditions and Substances Exposure Control Programs, Annex B.

c. Audiometric Testing. Each air operations unit shall conduct audiometric testing annually. Testing should be administered during the same period each year. The unit safety officer shall be responsible for scheduling and processing necessary paperwork associated with specified vendor services.

d. Procedures for Testing.

(1) Schedule testing with the specified vendor and forward the information to the OAO safety coordinator.

(2) The vendor will conduct the hearing test at the unit's location.

(3) At the conclusion of the test, the vendor will submit an invoice to the air operations unit for their services.

(4) The SSC will approve the invoice.

(5) Upon approval by the SSC, the invoice shall be forwarded to Accounts Payable Section for processing and payment.

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ANNEX A

CHP 390, FLIGHT HELMET INSPECTION CHECKLIST

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

FLIGHT HELMET INSPECTION CHECKLIST

CHP 390 (New 2-02) OPI 018

NAME (FIRST, M.I., LAST)		SERIAL NUMBER
John L. Smith		HGU84-001
LOCATION (DIVISION, AREA)	**LOCATION CODE**	**INSPECTION DATE**
Office of Air Operations	018	MM/DD/YYYY

1. Inspect outer shell for cracks or damage.	☑ ACCEPTABLE	☐ UNACCEPTABLE
2. Check and hand tighten all screws and/or bolts.	☑ ACCEPTABLE	☐ UNACCEPTABLE
3. Check operation of clear and dark lens.	☑ ACCEPTABLE	☐ UNACCEPTABLE
4. Check clear and dark lens for severe scratches or damage.	☐ ACCEPTABLE	☑ UNACCEPTABLE
5. Inspect chin strap and pad for wear.	☑ ACCEPTABLE	☐ UNACCEPTABLE
6. Check operation of boom microphone and connections.	☑ ACCEPTABLE	☐ UNACCEPTABLE
7. Inspect nape strap and pad for wear.	☑ ACCEPTABLE	☐ UNACCEPTABLE
8. Inspect cord assembly.	☑ ACCEPTABLE	☐ UNACCEPTABLE
9. Inspect ear cups *(L & R)* for wear.	☑ ACCEPTABLE	☐ UNACCEPTABLE
10. Inspect interior lining for wear.	☑ ACCEPTABLE	☐ UNACCEPTABLE

Remarks:
Noted deep scratches to dark lens. Replace dark lens and mole skin on inner visor cover.

INSPECTED BY (FIRST, M.I., LAST)

Robert D. Jones

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ANNEX B

CHP 399, FLOTATION VEST INSPECTION CHECKLIST

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

FLOTATION VEST INSPECTION CHECKLIST

CHP 399 (New 2-02) OPI 018

LOCATION (DIVISION, AREA)	LOCATION CODE	VEST NUMBER	INSPECTION DATE
Office of Air Operations	018	018-01	MM/DD/YYYY

1. Inspect outer surface for wear and fraying of thread.	☑ ACCEPTABLE	☐ UNACCEPTABLE
2. Check NOMEX collar for wear.	☐ ACCEPTABLE	☑ UNACCEPTABLE
3. Check fading and wear due to ultraviolet exposure.	☑ ACCEPTABLE	☐ UNACCEPTABLE
4. Open vest to ensure operation of Velcro fasteners.	☑ ACCEPTABLE	☐ UNACCEPTABLE
5. Check operation of inflation mechanism and integrity of CO^2 cartridge.	☑ ACCEPTABLE	☐ UNACCEPTABLE
6. Check operation of manual inflation valves *(left and right)*.	☑ ACCEPTABLE	☐ UNACCEPTABLE
7. Inflate vest manually.	☑ ACCEPTABLE	☐ UNACCEPTABLE
8. Check integrity of rescue strobe.	☐ ACCEPTABLE	☐ UNACCEPTABLE

Remarks:
Replace Nomex collar due to operational wear.

INSPECTED BY (FIRST, M.I., LAST)

John L. Smith

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ANNEX C

CHP 419, HEED BOTTLE INSPECTION CHECKLIST

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

H.E.E.D. BOTTLE INSPECTION CHECKLIST

CHP 419 (New 6-02) OPI 018

SERIAL NUMBER	INSPECTION DATE	LOCATION
H-001	MM/DD/YYYY	Office of Air Operations-018

1) Visually inspect the device for evidence of malfunction or external damage.	☑ Acceptable	☐ Unacceptable
2) Inspect the mouthpiece and second-stage assembly for cuts, cracks, cleanliness, and overall integrity.	☐ Acceptable	☑ Unacceptable
3) Carefully inspect the low pressure hose to ensure it is securely connected to both the first and second-stage regulators. Inspect the hose for cuts, cracks, blisters, abrasions or other damage, and inspect the fittings for corrosion.	☑ Acceptable	☐ Unacceptable
4) Prior to pressurizing unit, with the ON/OFF in the OFF position, place regulator mouthpiece in the mouth and proceed to inhale. No air should flow through the mouthpiece. If air flow is detected, return unit and report discrepancies to the AOS ALSE coordinator.	☐ Acceptable	☐ Unacceptable
5) While holding the first-stage regulator securely, slowly turn the cylinder counter-clockwise until the ON/OFF indicator pin can be sighted through the small aperture marked ON. Listen for any obvious signs of leakage from the system, including free flow from the second-stage regulator. Again, report any discrepancies to the AOS ALSE coordinator. The bottle shall be topped-off at 2700 psi.	☑ Acceptable	☐ Unacceptable

REMARKS

Helicopter emergency egress device bottle placed out of service and returned to manufacturer for repair of defective low pressure hose.

INSPECTED BY

John L. Smith

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ANNEX D

CHP 409A, EXTENDED AIRCRAFT DEPLOYMENT MATRIX

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

EXTENDED AIRCRAFT DEPLOYMENT MATRIX

CHP 409A (New 11-05) OPI 018

The following chart represents a consecutive fifteen day aircraft and aircrew deployment. Maximum flight times and maximum on-duty times are indicated. The intent of this matrix is to monitor an aircrew so they do not exceed these limits. Each flight crew personnel shall have a completed matrix during deployment which is maintained by the designated Safety Officer.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MAX FLIGHT TIME	8	15	22	27	31	34	37	41	45	49	53	57	61	65	69
MAX ON-DUTY TIME	14	28	42	54	66	78	90	102	114	126	138	150	162	178	186

NAME	I.D. NUMBER	DATE
John Smith	1234	MM/DD/YYYY

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FLIGHT TODAY	5.30	6.00	5.50	6.00	5.20	4.00	5.00	0.00	6.00	6.00	4.00	0.00	8.00	4.00	4.00
TOTAL FLIGHT	5.30	11.30	16.80	22.80	28.00	32.00	37.00	37.00	37.00	43.00	19.00	53.00	61.00	65.00	69.00
FLIGHT TOMORROW	8.00	8.00	8.00	8.00	6.00	5.00	4.00	8.00	6.00	4.00	4.00	8.00	4.00	4.00	0.00
DUTY TODAY	12.00	12.00	12.00	14.00	14.00	12.00	14.00	12.00	10.00	14.00	12.00	12.00	12.00	12.00	12.00
TOTAL DUTY	12.00	24.00	36.00	50.00	64.00	76.00	90.00	102.00	112.00	126.00	138.00	150.00	162.00	178.00	186.00
DUTY TOMORROW	14.00	14.00	14.00	14.00	14.00	14.00	12.00	12.00	14.00	12.00	12.00	12.00	12.00	12.00	0.00

COMMENTS

SAFETY OFFICER	DATE REVIEWED
Gerry Perez	MM/DD/YYYY

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ANNEX E

CHP 93P, DIVISION AIR UNIT SAFETY INSPECTION

STATE OF CALIFORNIA
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

DIVISION AIR UNIT SAFETY INSPECTION

CHP 93P (Rev. 9-94) OPI 064

Indicate "OK" if item inspected is satisfactory. Use comments section to document any action taken as a result of the inspection.

YEAR

QUARTER
☑ First ☐ Second ☐ Third ☐ Fourth

OFFICE		Fuel inspection *(continued)*	
1. Tops of lockers clear	OK	Leaks	OK
2. Fire extinguishers	OK	Filters due	OK
3. Flight planning organized and current	OK	Fire extinguishers	OK
4. Safety board OHR's, files, follow-up	OK	Fuel use logs	OK
5. Stairs	OK	Engine oil and fuel	OK
6. Cords	OK	Engine security	OK
Computer	OK	Padlock operation	OK
Telephone	OK	Overall condition of fuel cell	OK
Electric	OK	8. Emergency shut-off posted	OK
7. File cabinets	OK	9. Date satellite fuel cell(s) last inspected:	OK
8. Restrictions posted and current	OK	**HANGAR**	
9. "ALSE" records	OK	1. Tops of cabinets clear	OK
10. Hazard map current	OK	2. Tools clean and stored	OK
11. Aircraft status board current	OK	3. Fire extinguisher	OK
12. Evacuation routes posted	OK	4. Jet oil	OK
13. Emergency notification roster current	OK	5. Floor clean	OK
14. Safety bulletin board current	OK	6. Dispensable items picked up	OK
OUTSIDE		7. Airplane oil dated	OK
1. Fire extinguishers	OK	8. Rags available for clean up	OK
2. Lights	OK	9. Water available for hazardous material spills	OK
Perimeter	OK	10. Overall cleanliness	OK
Wind sock	OK	11. Doors operate freely	OK
Antenna	OK	12. Hangar security	OK
Hangar	OK	13. Aircraft parking lines visible	OK
Helipad	OK	14. Proper water drainage	OK
3. Taxi lines	OK	15. Oxygen storage	OK
4. Parking identified	OK	16. Flammable liquid storage	OK
5. Fod	OK	17. Weapons clearing tube	OK
6. Fuel island	OK	18. Condition/safety of inspection ladders	OK
Fire extinguisher	OK	**AIRCRAFT**	
Leaks	OK	1. Fire extinguishers	OK
7. Fuel inspection	OK	2. Charts current	OK
Hoses and nozzles	OK	3. Maintenance inspections current	OK

COMMENTS

INSPECTED BY	DATE INSPECTED	DATE COPY SENT TO AOS
Sergeant John Smith	MM/DD/YYYY	MM/DD/YYYY

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