

UNITED STATES FOREST SERVICE



Night Helicopter and Night Aerial Supervision Plan

Table of Contents

Signatures and Approval.....	3
Scope / Authority / Duration	4
Aviation Safety Management Systems (ASMS)	6
Chapter 1 Night Fixed Wing Operations.....	9
Chapter 2 Night Water Dropping Helicopter Operations.....	15
Chapter 3 Night Rotor Wing Aerial Supervision.....	30
Appendix A-Forms (Night Water Dropping Helicopter).....	38
Appendix B- Forms Night Air Attack	42
Appendix C - Region 5 Night Air Operations Mobilization and Notification Procedures.....	46
Appendix D H-531 Night Operations Training and Procedures	55
Appendix E- RotorWing Aerial Supervision Forms	59
Definitions.....	62
Change digest for 2025.....	64

Signatures and Approval

Prepared By:

Date:

Matthew Muller , Helicopter Operations Specialist , Pacific Southwest Region

Recommended:

Date:

Josh Mathiesen, Regional Aviation Officer, Pacific Southwest Region

Reviewed:

Date:

Kyle Tolosano, Regional Helicopter Program Manager, R5

Reviewed:

Date:

Lyndsay Johnson , Regional Aviation Safety Officer, R5

Reviewed:

Date:

Chris Tipton, Fixed Wing Branch Chief Aviation Operations, WO

Reviewed:

Date:

Beau Dobberstein, Rotor Wing Branch Chief Aviation Operations, WO

Approved:

Date:

Paul Linse, Assistant Director, Aviation, WO

Scope

This document provides information for the use of US Forest Service (USFS) night aircraft within the Pacific Southwest Region to enhance safety and operational effectiveness through the establishment of standardized operational guidelines and minimum qualification standards for the specialized aviation positions.

Authority

The Pacific Southwest Regional Aviation Group is responsible for the update and completion of this plan. Authorization is granted by the Chief of the Forest Service and receives the leader's intent and direction from the Director of Fire and Aviation Management.

The Night Flying Helicopters and Night Flying Aerial Supervision Platforms are administered and operated by the Pacific Southwest Region.

The Forest Service must abide by all applicable laws, regulations, policies including but not limited to:

1. Title 14 Code of Federal Regulations ([14 CFR](#)) relevant to the mission
2. Title 41 Code of Federal Regulations ([41 CFR](#))
3. [FSM 5700](#) Aviation Management
4. [FSH 5709.16](#) Aviation Management Handbook
5. National Aviation Safety and Management Plan (NASMP)
6. [National Aviation Safety Management System Guide \(NASMSG\)](#)

For Interagency operations, the please refer to the following references:

1. [NWCG Standards for Aerial Supervision \(SAS\)](#)
2. [NWCG Standards for Helicopter Operations \(NSHO\)](#)
3. [Firescope Night Flying Guidelines ICS 800](#)

Duration

This Plan is effective until superseded or a new version is approved.

Aviation Strategic Plan

The [FY 2022-2026 Aviation Strategic Plan](#) establishes four over-arching goals for all aspects of Forest Service Aviation. These goals address safety, people, organizational framework, and technology. The 2024 Night Helicopter and Night Aerial Supervision Plan directly contributes to the strategic goals and objectives set forth within the Aviation Strategic Plan.

—SUMMARY

Fiscal Years 2022-2026 Goals and Objectives

**STRATEGIC GOAL**

Prevent Accidents Through Proactive Risk Management

- Objective 1.1:** Enhance and improve the agency's Aviation Safety Management System.
- Objective 1.2:** Develop an acceptable level of safety performance with targets and indicators.
- Objective 1.3:** Continue to improve the risk management process.
- Objective 1.4:** Ensure aviation systems function as designed and comply with requirements and standards.
- Objective 1.5:** Develop a proactive culture with a learning environment and open communication.

**STRATEGIC GOAL**

Take Care of Our People

- Objective 2.1:** Fill positions with high-quality applicants with a diversity of culture, perspectives, and ideas.
- Objective 2.2:** Create an aviation career development plan including requirements, training, and mentoring.

**STRATEGIC GOAL**

Organize for Success

- Objective 3.1:** Engage in a continuous review of existing policy, adjusting as needed to meet emerging needs.
- Objective 3.2:** Develop a deliberate and transparent budget process that clearly identifies priorities.
- Objective 3.3:** Monitor and improve efficiency of contracted aircraft.

**STRATEGIC GOAL**

Explore, Evaluate, and Adopt Emerging Technology to Achieve the Mission More Effectively

- Objective 4.1:** Restore, sustain, and modernize the Forest Service Aviation fleet.

Aviation Safety Management Systems (ASMS)

Aviation safety is the practice of managing risks in aviation. Safety is a commitment that requires proactive management within the functional areas of an Aviation Safety Management System (ASMS) including policy, risk management, promotion, and assurance, to reduce the likelihood of aircraft mishaps.

Proactive safety management focuses on leading safety indicators that fall outside traditional or historical metrics (e.g., counting the number of accidents). The Forest Service incorporated an ASMS into policy in 2010 to shift this focus on undesirable outcomes to an understanding of how collaborative efforts in aviation management help prevent aviation mishaps.

Implementing ASMS as a formal, top-down, organization-wide approach requires support at the top levels of leadership where an accountable executive is designated to support the safety effort. The [FY 2024-2026 National Aviation Safety Management System Guide \(NASMSG\)](#) documents Fire and Aviation Management (FAM) leader's intent and describes authority, roles and responsibilities, programs and activities for the application, implementation, and maintenance of ASMS in the Forest Service and for its aviation service providers.

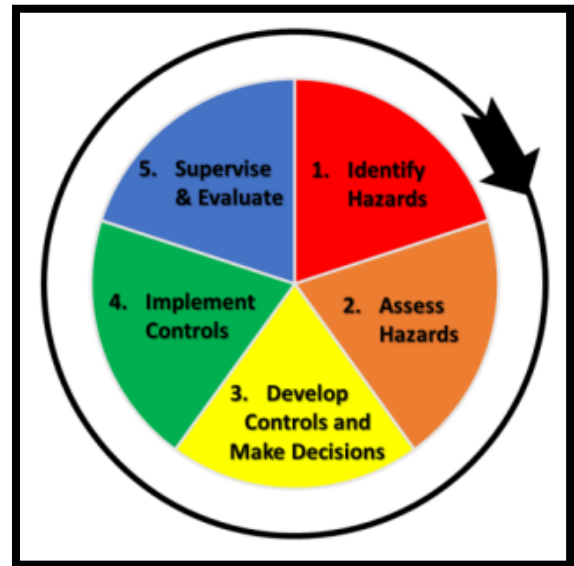
This NASMSG provides a basic understanding of the four components and the 12 elements of ASMS to ensure compliance with statutory requirements, agency policies, and industry best practices.

Forest Service Aviation Safety Management System	
4 Components	12 Elements
1. Safety Policy and Objectives: <i>"Establishes management's commitment to safety and sets the sideboards to work within"</i>	1.1 Management Commitment 1.2 Safety Accountability and Responsibilities 1.3 Appointment of Key Safety Personnel 1.4 Coordination of Emergency Response Planning 1.5 Safety Management System Documentation
2. Safety Risk Management <i>"Formalized way of identifying and managing hazards"</i>	2.1 Hazard Identification 2.2 Safety Risk Assessment and Mitigation
3. Safety Assurance <i>"Processes that verify ASMS policies, procedures and practices are properly applied and continue to achieve agency safety goals & objectives"</i>	3.1 Safety Performance Monitoring and Measurement 3.2 The Management of Change 3.3 Continuous Improvement of the SMS
4. Safety Promotion <i>"Ensures aviation personnel are informed, knowledgeable and competent to perform safety management duties"</i>	4.1 Training and Education 4.2 Safety Communication

Safety Risk Management (SRM)

Safety Risk Management (SRM) A formal process within the ASMS that describes the system, identifies the hazards, assesses the risk, analyzes the risk, and controls the risk.

Risk is an expression of the impact of an undesired event in terms of event severity and event likelihood. Throughout the SRM process, hazards are identified, risks analyzed, assessed, prioritized, and results documented for decision-making. The continuous loop process provides for validation of decisions and evaluation for desired results and/or the need for further action. The goal of SRM is not to eliminate all risk, but to manage those risks that cannot be eliminated so the mission can be accomplished with minimum negative impact. Risk management is a robust component of the Agency's ASMS and shall occur throughout Agency aviation operations.



Hazard identification is vital. A hazard is anything that could lead to an aircraft accident. Unless you know what hazards are out there, you cannot identify the risks they pose. And if you do not know what the risks are, you cannot do anything about them.

The [NWCG Standards for Aviation Risk Management \[PMS 530\]](#) establishes a common reference for terms, processes, and tools utilized in applying Risk Management to aviation operations. Risk Management is a systems-oriented process for identifying and controlling hazards across the full spectrum of missions, functions, operations, and activities conducted to meet organizational goals.

Flight Risk Assessment Tool (FRAT)

Using a Flight Risk Assessment Tool (FRAT) will provide an overall risk assessment score for the flight and profile for each phase of flight. The most relevant hazard and risk concerns will become obvious and will have a document to compare to the acceptable level of risk.

When the risk for a flight exceeds the defined acceptable level, the flight will be further evaluated, and risk decisions made by appropriate leadership. Just like other forms or levels of

risk management, the FRAT should be documented and reviewed for additional identified risks and mitigation. This should be incorporated into the hazard collection. The FRAT should not be static but should reflect actual hazards likely to be encountered during the flight.

A FRAT must be completed at a minimum, prior to the first flight of the day and any time significant changes occur that may affect the flight. A FRAT will be reviewed by all mission participants. FRATs will be retained after mission use and archived by the Unit(s) for documentation and quality assurance per [FSH 5709.16 Chapter 20](#).

Aviation Safety Assurance

Safety Reporting. Every employee shall report to a supervisor, Unit Aviation Officer (UAO), or line officer any aviation operation that the employee believes is being conducted in a hazardous manner. Every employee shall use the [SAFECOM](#) system to report any condition, observance, act, maintenance problem, or circumstance that has the potential to cause an aviation or aviation related mishap. The SAFECOM system is non-punitive and is not to be utilized for contract evaluations/compliance. It should also be used for reporting positive safety actions and mishap prevention measures.

- Regional Aviation Safety Officer (RASO) Lyndsay Johnson 661-565-6843

Internal Evaluations and External Audits. The National Office, Regional Office, and hosting unit will provide oversight, quality assurance and review of night flying operations throughout the field season to accomplish the following:

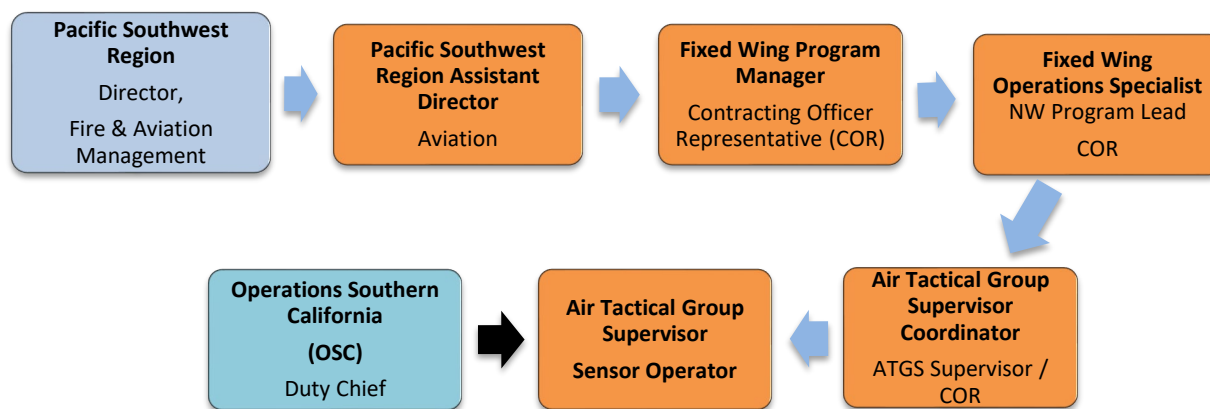
- Contractor Compliance Audits
- Operational Reviews
- Aviation Safety Technical Assistance Teams (ASTAT)
- Base Reviews

Any information available in the form of a formal report or after action should be obtained and reviewed by the Regional Aviation Safety Officer for identified hazards, mitigations, and other safety related trends for inclusion in the larger organizational data analysis effort. This information will be shared regionally as well as with Washington Office Assurance functions for inclusion in the ASMS.

Chapter 1 Night Fixed Wing Operations

NightWatch is the combination of a contracted Light Fixed-wing Aircraft (Air Attack 51), qualified Air Tactical Group Supervisors who have completed additional training related to Incident Awareness and Assessment (IAA) technologies and contracted Aerial Sensor Operators (ASO's). This resource provides enhanced situational awareness, near real-time information sharing and dissemination and aerial supervision in support of the PSW Night Air Operation and interagency all-hazard incidents in the Southern California Operations Area of the Pacific Southwest Region.

Organization



Before Arrival

The Night ATGS(s) will read and understand the Night Air Operations Plan, the Region 5 exclusive use light fixed wing ATGS/IAA aircraft contract and FIREScope Night Flying Guide:

- [FIREScope Night Flying Guide](#)

Carry an enhanced ATGS kit with an illumination device. Examples of some illumination devices used are:

- Flashlight
- Headlamp with or without color filter
- Penlight with light and ink on the same side of the instrument
- Kneeboard light
- Lip/Mic light

The Air Tactical Group Supervisor Coordinator (ATGS COORD) will maintain the staffing schedule of the night ATGS's. The ATGS COORD will make every effort to avoid a simultaneous pilot/ATGS change-out.

Daily Briefings

The NightWatch ATGS will conduct daily shift briefings using the standard elements contained in the [AA51/FireWatch 51 Standard Operations Procedures guide \(SOP\)](#). The night ATGS(s) will participate in the night operations briefing with the night flying helicopter either in person or via technology when possible. Briefing should occur at the beginning of the night flying helicopter's shift.

Incident Response

The USFS South Operations Area Duty Chief is the authority for all mobilizations of AA-51. The dispatching/hosting ECC will contact the assigned ATGS and provide a complete FC-106 dispatch form with incident contact (telephone and email) information before the aircraft will respond. Inflight divers will be given in the same format, and "blank" FC-106 forms are kept on the aircraft for this purpose. Items required when responding to an IAA mission request include:

- Incident(s) FC-106 or kneeboard(s)
- Incident contact(s)
- Make contact with incident personnel to discuss incident IAA objectives

The NightWatch aircraft is mobilized in the same manner as a daytime Air Tactical Platforms. ATGS will coordinate with South Ops (OSCC) Federal Aircraft desk and ECC at the beginning of each shift to status the asset and receive fire activity updates. Aircraft weight and balance with manifest and performance will be discussed and recorded on the shift diary. Requesting units that order night operational aircraft will have their ECC staffed with qualified aircraft dispatchers during night aircraft operations. Items to consider;

- Normal duty day for the resource is 12 hours for day shift and 12 hours for night shift.
- Established shift hours will remain 1800 - 0600 throughout the duration of the fire season.
- Avoid calling ATGS personnel when they are off duty to ensure 8 hours of uninterrupted rest.
- The night ATGS pilot has a maximum duty day of 14 hours of which eight can be flight hours

Incident Operations

The number one priority of this resource is incident airspace management. When supervising aircraft operating with the aid of NVG's, aerial supervisors shall be vigilant of any formation or inflow of fog or low clouds as NVG's do not see fog forming or encroaching. This includes travel routes to and from bases of operation and dip sites. The Night ATGS will advise any aircraft operating with NVGs of any fog or low cloud or reduced visibility situations. Assume they are on NVG and cannot see the hazard.

The NightWatch crew shall use caution to avoid flying into smoke column(s). Smoke columns may be hard to detect at night when there is little or no ambient light. The NVG monocular on the aircraft can be used to greatly improve situational awareness on the location of the smoke column. The PIC and ATGS shall be extra cautious of hazardous terrain, aerial hazards and must avoid losing situational awareness.

Recovering to alternative bases of operation is not preferred for this program as the aircraft is shared between two shifts. However, if an alternative base is the best option between flight legs during a shift the flight crew should exercise that option.

Incident Awareness and Assessment

Intelligence gathered over incidents will be viewable and retrievable in the National Interagency Fire Enterprise Geospatial Portal (EGP). See Appendix B, Interagency Aviation Information Bulletin, for instructions on EGP account creation and Air Attack 51 data access.

Duty Day and Transitions

It is important to understand that duty day has a significant impact on the utilization of the Night Air Attack. "Early Up's," shifts beginning before established start time, should be avoided as much as possible. For extended attack/large fires every effort should be made to have the Night ATGS arrive on the scene of the incident with enough daylight to assess hazards, terrain, fuel, fire behavior and aerial firefighting activity (familiarization flight). This flight does not need to be any longer in duration than necessary to receive a briefing from the day aerial supervision platform(s). It is good practice to be requested over an incident to gather situational awareness and conduct a briefing to Operations before the morning briefing at ICP(s). This usually occurs between 0500-0600 hours. When practical, the Night Air Attack should have a Night to Day transition with the first day Air Attack. Duty day and cumulative flight hour management can affect the opportunity to have a transition with the "first up" day air attack and the ability to

provide constant coverage during critical incident operations. Adjustments to the daytime air attack duty day should be made to accommodate these important transitions.

Contract Management

It is important that all ATGS's maintain records in accordance with established contract business standards. To assist with this, a contract management an electronic folder has been created and consist of the following.

- Contract with Modifications
- ATGS Daily Contract Administrative forms
- Daily Flight Risk Assessment Tool (FRAT)
- Air Attack 51 Standard Operating Procedures
- Pacific Southwest Night Helicopter and Night Aerial Supervision Plan
- Region 5 Frequency Load

For access to the electronic folder contact the FWPM or FWOS program lead.

ATGS is responsible for completing the following aircraft contract daily forms:

- Aircraft Contract Daily Diary
 - Include duty day experience, ordering issues, incident-specific challenges (ex: 6 & 36, flight time issues) and any constructive criticism for the improvement of the program
- Completion of the FS-122, IBS data entry
- Incident Aircraft Cost Summary

Maintenance

When maintenance is performed on the aircraft (routine or unscheduled) contact a USFS maintenance inspector before resuming flight activities.

- Region 5 Airworthiness Duty Line 916-640-1040 (Always call this first)

Any scheduled maintenance (phase inspections, 150's, etc.) will not result in unavailability charged to the contractor. Scheduled maintenance that is projected to take for more than 12 hours require the ATGS to notify SOPS and the Aircraft Coordinator at SOPS, Angeles ECC, the FWPM and the COR's.

Unscheduled maintenance of any type, aircraft incident/incident with potential shall be reported to the ECC, OSCC, and AMI listed above and the contract COR. SAFECOM's shall be

completed as soon as the issue is known. The corrective maintenance action(s) and return to contract availability will be approved by the responsible AML.

Training and Certification

The NightWatch/FireWatch 51 program requires training and an endorsement to ensure employees are familiar with integrating Human Aided Technology with the aerial supervision and IAA gathering roles. To ensure a ATGS is familiar and confident with the enhanced rolls for this mission a job aid has been created and is required to be completed prior to staffing the platform. The Pacific Southwest NightWatch/FireWatch 51 Fixed Wing Operations Specialist program lead and the Pacific Southwest ATGS Coordinator can nominate and certify the ATGS Job Aid (appendix B) for Incident Awareness and Assessment training. A list of appropriately trained and documented Night ATGS/Sensor Operators shall be generated by the Pacific Southwest NightWatch /FireWatch 51 Fixed Wing Operations Specialist program lead.

Proficiency Flights

Proficiency / Training flights ensure the NightWatch crew, aircraft and equipment are operational. NightWatch crewmembers who have not flown a mission within the past 14 days may perform these flights (up to one hour). Before the flight, complete the IAA Proficiency / Training Flight Briefing checklist (Appendix B). Flights will include the following tasks:

- Preflight checklist as requested by the pilot
- Initiate standard flight following procedures
- Communicate terrain avoidance measures with pilot
- Assess elevation(s) of FTA
- Assess aerial hazards in the FTA
- Confirm avoidance of smoke column with Pilot
- Confirm onboard computer system is operational
- Consistently assess for fog formation
- Proper shutdown and stowing of system
- Conduct AAR
- Document training flight narrative in Daily Diary

Training flights can be independent of the helicopter(s), but it is highly encouraged to participate in helicopter proficiency/training flights.

Authorized Non- qualified crewmembers

Based on the elements of CRM and extended CRM into adjoining functions the following personnel are approved to fly on board the aircraft during training and or operational flights. ATGS/ATGS trainees, Helicopter Managers for Night Flying Helicopter, Helicopter Operations Specialist supporting the night flying helicopter program, Helicopter Coordinator (HLCO) or HLCO trainee supporting the night HLCO program, Aircraft dispatchers, or Incident Personnel which have a direct need of program products (OSC, PSC, IC). All flight operations will be conducted in accordance with this plan and supporting documentation.

Chapter 2 Night Water Dropping Helicopter Operations

Type 2 Crew Organization

The Helitack crew will be staffed to a minimum of 8 personnel to maintain 7-day staffing, funding for positions are as follows: 1-GS-9 Superintendent, 2-GS-7/8 Captain, 1-GS-6/7 Squad Boss, 4-GS-4/5 Senior Firefighter

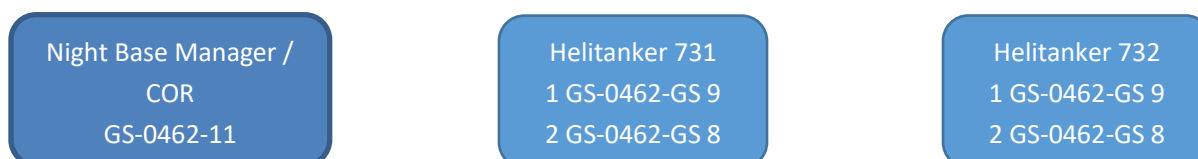
This is a minimum to be able to staff the helicopter at minimum levels. It is recommended that there be additional personnel up to 16. This will be evaluated throughout the fire season to determine the best crew size.

Type 1 Crew Organization

Proposed staffing for the type 1 Night helicopter module is 7 personnel, this will provide for 7-day coverage for both helicopters and provided Helibase, and IMT Support when mobilized to large fires. The intent is for the Night crew to be able to fill all critical need within the night organization when mobilizing to large fires, positions such as Night Helibase Manager, Night Air Base Radio Operator, Night Air Support.

If a Call When Needed (CWN) NVG Type 1 Helicopter is ordered, Helicopter Management must meet the same minimum requirement for Day Helicopter Management. Additional training of the Night Aviation program must be completed prior to serving as a Night HMGB. See training section below for additional requirements.

Proposed Type 1 Crew Organization



Training

High levels of NVG proficiency, along with a well-balanced NVG experience base, will help to offset many of the visual performance degradations associated with night operations. NVG experience stems from proper training coupled with numerous NVG flight operations. An experienced NVG crewmembers should be acutely aware of the NVG operational envelope and its correlation to various operational effects, visual illusions and performance limitations.

Continued exposure during the NVG recurrent training will help strengthen and solidify this experience base. NVG currency training needs to include ground evolutions and flight training curriculum.

Night Vision Goggle (NVG) Initial Training & Certification

Annual training shall be completed by a FAA Approved NVG instructor along with a Qualified NVG HMGB or NVG HLCO. Training syllabus is housed within the Regional Aviation Helicopter Program, and is available upon request.

A list of appropriately trained and documented NVG Managers and NVG Crewmembers shall be sent to the Pacific Southwest Regional Helicopter Program Manager or Helicopter Operations Specialist for certification.

Minimum Initial Night/NVG requirements as defined in [14 CFR Part 61.31](#)

Minimum currency requirements as defined in [14 CFR Part 61.57](#)

[14 CFR Part 61.31](#) includes the following:

- Crew Resource Management
- Aero Medical Factors
- Night Vision Goggle Operations
- Aircraft Lighting Systems
- NVG Night Terrain Interpretation

Pilot initial flight instruction should include the following as a minimum:

- Pilot Basic Flight Maneuvers
- Pilot Emergency Procedures
- Agency Specific Missions
- Pilot Check Flight

NVG Recurrent Training

NVG Training, Operating Experience, and Recurrent Training:

Training and currency shall be accomplished IAW:

[14 CFR 61.31 \(k\)](#) Additional Training Required for NVG Operations

[14 CFR 61.57 \(f\)](#) Operating Experience

[14 CFR 61.57 \(g\)](#) Night Vision Goggle Proficiency Check

Evaluation:

The [Interagency Practical Test Standards \(IPTS\)](#) is a supplement to the FAA PTS. This standard identifies and establishes the additional pilot knowledge and skills that are expected for each specific interagency helicopter pilot qualification for day, night, and night vision goggle (NVG) operations. Any Variation or Deviation from the standards in this document must have prior approval in writing from the National Helicopter Specialist (OAS) and/or the National Helicopter Standardization Pilot (USFS).

Currency Flights

If either the primary or relief Night Flying Operations crews have not conducted NVG flight within the previous 25 days, the vendor is authorized one (1) hour of NVG flight for each crew at the government's expense. The flight will involve mission training covering the following: (1) Full start up, (3) takeoffs, (3) patterns, (3) Landings, (3) Hover fill with water drop, (1) shutdown.

Currency training shall be conducted at least every two weeks for NVG Crewmembers and NVG Managers. It is recommended that night operations training be coordinated with aerial supervision platforms and or other NVG Helicopters to enhance the proficiency experience. NVG Currency is not required for Type 1 NVG Managers.

Training for Medical Emergencies:

In addition to high levels of NVG proficiency, it is imperative for NVG Crewmembers and NVG Managers to be adequately trained in responding to medical emergencies during night operations both on the ground and in the air. This training should align with the principles of the entire night operations plan and be conducted only in an emergency where no other incident aircraft or form of transportation is available.

Training for medical emergencies shall encompass the following components to be done on the ground in classroom and static display scenarios:

High and Low-Level Reconnaissance of Landing Zone: Crewmembers shall be trained in how to conduct thorough reconnaissance of the landing zone from both high and low altitudes, ensuring safe and secure access for medical evacuation operations.

Patient Size-Up: Crewmembers will be trained to assess the condition and needs of the patient upon arrival at the landing zone, including any potential hazards or complications.

Patient Packaging: Comprehensive training will be provided on the proper techniques for safely packaging patients for evacuation, considering factors such as injuries, medical conditions, and environmental conditions.

Patient Extraction: Crewmembers will undergo simulated drills to practice efficient and effective patient extraction procedures, ensuring timely evacuation and delivery to appropriate medical facilities.

This training shall be integrated into the overall night operations training curriculum and conducted as needed to maintain proficiency. It is recommended that night operations training involve Night Aerial Supervision Platforms to enhance the training experience and ensure alignment with operational protocols.

Duties and Responsibilities

NVG Helicopter Pilots are an essential part of any aviation mission and must be made an integral part of the team effort whose objective is flight safety. The Pilot is in command of the aircraft and has ultimate responsibility, under both Federal Aviation Regulations and agency regulations, for the safety of the aircraft and its occupants the Pilots shall:

- Have a current interagency card showing qualification for Night Flying.
- Attend Night Flying training annually using the training syllabus in the NFG (ICS- 800).

In addition to all duties and responsibilities listed in Chapter 2 of NWCG Standards for Helicopter Operations (NSHO), for Night Operations the Pilot shall:

- [Complete Night Operational Period Checklist \(Appendix A document 1\)](#)
- [Complete the Night Operations Flight Risk Assessment Tool \(Appendix A document 3\)](#)
- [Complete the NVG Mission GO/NO-GO Checklist for every NVG Flight Operation \(Appendix A document 1\)](#)
- Sign the GO/NO-GO Checklist
- Helicopter Co-pilot shall meet all experience requirements and training stated in the contract Section C
- Attend Night Flying training annually in accordance with Firescope Night Flying Guidelines ICS-800

NVG Helicopter Manager - an individual who has essential in-flight and or administrative duties to ensure the safe operation of the aircraft during an unaided flight or NVG flight operation and/or has firefighter duties specifically on Initial Attack fires. The NVG Manager is the keystone to the safety and effectiveness of Helicopter Night Operations. In addition to what is stated in the NSHO for duties and responsibilities for Helicopter Manager, the NVG Manager must:

- Use and document risk management practices for all aspects of night operations.
- Ensure that trained and qualified personnel are assigned to duties.
- Develop and maintain effective communication with Night Flying cooperators.
- Work with cooperators to identify processes and procedures for improving Night Flying Operations.
- Be qualified as a NWCG Helicopter Manager (HMGB).
- Attend Crew Resource Management (CRM).
- Meet their corresponding Position Competencies stated in the Forest Service Fire and Aviation Qualifications Guide (FSFAQG).

Receive specialized NVG training and authorization to perform essential in-flight duties to ensure safe operation of the aircraft during NVG flight operations. Prior to flight complete and sign Appendix A forms:

- [NVG Mission GO/NO-GO Checklist \(Document 1\)](#)
- [Weather Observations \(Document 2\)](#)
- [Flight Risk Assessment Tool \(Document 3\)](#)

NVG Crewmembers - In addition to what is stated in the NSHO for duties and responsibilities for Helicopter Crewmember, the NVG Crewmember:

- Shall be a qualified or trainee Helicopter Crewmember.
- Receive specialized training in all subjects outlined in NFG.

Equipment

Night Vision Goggles (NVGs) are a head-mounted, lightweight, and self-contained binocular appliance that amplifies ambient light. NVG are worn by Pilots and essential aircrew members to enhance the person's ability to maintain visual reference to the surface and see and recognize aerial hazards.

Night Vision Goggles must comply with the standards outlined in [Technical Standard Order \(TSO-C164\)](#), which specifies that they must meet the minimum performance standards detailed in Section 2 of RTCA Document No. (RTCA/DO)-275, defining the Minimum Operational Performance Standards for Integrated Night Vision Imaging System Equipment, dated October 12, 2001; night vision goggles used in aviation must meet these specific performance requirements to be considered airworthy

All NVG equipment will be maintained to the manufacturer's specifications.

Operational Planning

The Incident Commander or Incident Management Team needs to be aware of the duty and hourly flight limitations. The only night helicopter mission approved is water/retardant-dropping and flights supporting this mission, i.e., transporting essential Helitack Crewmembers to the helispot to fill the helicopter tank and training flights.

- Flights will be conducted under VFR conditions.
- For aircraft equipped with an operational searchlight, no minimum illumination value will restrict the helicopter from flying at night.
- Pilot and Co-Pilot shall be well rested and have 10 hours off-duty preceding the start of their shift.
- Helicopter Pilot flight time (including day, night and NVG) will not exceed a total of six (6) hours per shift.
- Helibase and helispot location requirements are more stringent than in daylight (see below).
- Pilot night flying currency must be maintained.
- Forest Service Contracted Helicopters and for interagency night flying operations, the USFS utilizes FIRESCOPE for operational guidance. (July 2023 ICS-800)
- Dip Site safety parameters for night operations:

Aircraft Type	Dip Site Obstacle Clearance
S-70/UH-60 or smaller	150 feet x 150 feet
CH-47 / S-64	200 feet x 200 feet

- All dip sights must be flown by the Pilot in the daytime prior to use at night and follow night operations Dip Site Briefing Worksheet checklist.

- Approved helispots are to be flown by the Pilot in the daytime prior to use at night. This can be accomplished pre-season and during the season. Exemptions to this requirement is if the helispot is a lighted airport, or at an established water point or dip site. Prior to utilization the pilots shall be briefed on traffic patterns, hazards and, led in by another helicopter.
- All forests should develop a pre attack packet/maps for night operations including: Helispots, dip sites, hazards, airports, contacts, etc. and will be housed with the UAO
- The forests will be responsible for periodic checks and notification of any changes to the helispot and dip sites.

Operational Planning should be accomplished prior to the incident so that night flight operations can focus on the mission. Aerial hazard maps of the forests will be available for use. Electronic devices (not all electronic devices are compatible with Night Vision Imaging Systems) can and should be used in replacement of paper maps.

- Helitack personnel and Pilots shall be trained in the completion of the Night Flying Flight Risk Assessment Tool (See Appendix A document 3)
- Cooperation with other agencies in Night Flying is of utmost importance. Cross training and multi-agency training is encouraged to promote standardization and safety.
- Helitack personnel and Pilots shall participate with cooperators during night flying simulation drills.
- Chief Officers and Forest Aviation Officers shall keep telephone numbers of local cooperators that fly helicopters at night for coordination of helibases and helispots during initial attack. Helitack should have the capability to monitor Automated Flight Following (AFF) at temporary helibases.
- If utilizing a waterpoint, ensure standard hose compliment and hose adaptors/fittings are onboard aircraft.
- The Daily Flight Risk Assessment & Go/No-Go Checklist shall be completed as required by Policy
- Load Calculations will be completed daily and as required by policy.
- Manifests will be completed daily and as required by policy.
- When the helicopter is at the host base, the Forest Service shall provide the contractors with an adequate area for the pilots to rest.

Emergencies

For appropriate fire protection and crash-rescue see NSHO Chapter 12. NVG personnel shall train for emergencies on helispots. NVG Personnel shall be trained in the proper use of fire extinguishers and crash rescue tools for aircraft fires. This training should include practical exercises extinguishing small Class B fires with different types of extinguishers.

- Crash/Rescue plan prepared and posted.
- All personnel briefed.
- Fire rescue equipment present and operational.

Initial Attack / Extended Attack Operations

Night air operations are an appropriate use for NVG approved helicopters and Aerial Supervision aircraft. Certain procedures, which vary from daylight air operations, must be followed to assure the greatest margin of safety. During night operations a Temporary Flight Restrictions 91.137 (TFR) may be ordered as needed or when requested by the Helicopter Manager; or assigned ATGS.

Night flying operations should not occur before verification that at least one of the following Night Flying Operational Assessment criteria is met:

- Human lives are or will be threatened.
- Structures are or will be threatened.
- Resources or infrastructures of significant value are or will be threatened.
- Action May Limit Significant Fire Growth

Pilots shall become familiar with the area of operations.

Flight crews (pilots) shall be familiar with the area to be flown, either flown during the day, and/or receive an air-to-air briefing as well as being led-in and shown all hazards by another agency/operator that has previous experience over the fire.

Flight crews (pilots) shall not be expected to fly at night over terrain with which they are not intimately familiar.

Night Extended attack nighttime air operations will require additional flight crew, maintenance, and logistical support personnel to ensure continuous operations while complying with flight time and duty day limitations. to maintain an adequate work/ rest ratio.

Daily Pilot flight time and duty hour limitations should not be exceeded 6hrs. Aided or Unaided.

Incident Briefing

At a minimum all pilots and Helitack personnel will be briefed on and understand:

- Night Flying organizational chart and responsibilities.
- Current and forecasted weather and illumination levels.
- Flight following procedures.
- TFR's.
- Other aircraft and their designators.
- Flight routes.
- Check-in points.
- Aerial hazards.
- Including known migratory bird paths.
- Communications Plan.
- Command
- Air/Ground
- Air Tactical
- Ground Tactical
- Contacts.
- Air to Ground Interactions between pilots and ground personnel.
- Reinforce the need for brevity in radio communications
- Traffic routes (vehicle, personnel, and aircraft).
- Helibase personnel assignments.
- Pilots warned of dangers of directing drops directly over crews.
- Reinforce the need to assess the risk versus gain and element continually.
- Communications and Coordination

Incident Ground Response

- Helitack chief of party is responsible for coordinating with the fuel truck driver and any associated chase vehicles. Coordination includes the location of the airport/waterpoint/dip sight/helispot/helibase that the helicopter will be working out of and route to be taken.

- It is permissible, in times of limited staffing, to utilize a non-NVG crewmember to serve as a driver. This person's only approved role is to be a driver or second person in the vehicle.

Aircraft Base Radio Operator (ABRO) and Helispot Manager

- Responsible for directing and coordinating take-offs and landings of helicopters at helibase and/or helispots.
- Coordination of take-offs and landings of helicopters shall use an uncongested/discrete channel.

ABRO and Parking Tender

- Parking Tenders are mobile and require an adaptor to connect the flight helmet with their handheld radio.
- Parking Tender will have available lighted wands to assist in take-offs and landings.
- If it is determined that a Parking Tender is not necessary, the position will not be filled. This decision will be made by the NVG Manager with Pilot concurrence.

NVG Helicopter Manager

- This person is the point of contact for the Incident Commander (IC), Incident Operations Section Chief and/or Air Operations Branch Director (AOBD), as well as the dispatch center requesting helicopter missions.
- Control over helicopter operations.
- Coordinates helicopter missions with the helibase, Operations Section Chief and/or AOBD.
- Coordination between the helicopter(s) and fire line personnel.
- When possible, make positive communication with ground Point-of-Contact prior to takeoff.
- Ground radio traffic should be handled by the Division Group Supervisor, when possible, to eliminate confusion and limit the number of hand-offs of the aircraft.
- Emergency back-up communication between the helicopter(s) and helibase; can be met by monitoring Air Guard frequency.

Flight Following

- Flight Following will be accomplished per California Mobilization Guide (Chapter 50) standards for mission flight following.
- Flight following will be done by check-ins every 15 minutes. This can be accomplished by utilizing Automated Flight Following (AFF) and/or radio contact.
- Flight Following will be documented on the Form HBM-9 or utilizing local forms and procedures for aviation missions.
- During Night Flying Operations there will be an appropriately staffed dispatch center. (The Angeles, San Bernardino, Los Padres and Cleveland ECC's are staffed 24-hours per day on a regular basis.)
- Helitender should be equipped to monitor AFF when on remote helibases.

Helispots/Helibases

On helispots, one person will be designated as the Helispot Manager. That person is responsible for and will ensure the following:

- The Helicopter Manager and Pilot shall concur on the use of any new or existing helispots.
- The nighttime Pilot shall perform a daylight reconnaissance of the helispot prior to use. Exemptions to this requirement is if the helispot is a lighted airport, or at an established water point. Prior to utilization the pilots shall be briefed on traffic patterns and hazards.
- All required NVG positions filled by NVG qualified personnel.
- Communication plan shall be established and known with other helitack.
- All aerial hazards on the incident, helispots, and helibase vicinity shall be identified and briefed.
- Helicopter approach and departure paths established and known.
- Located in an area free of aerial hazards in the approach and departure paths.
- At a minimum, two trained NVG personnel will staff helispots.
- On multi-aircraft helispots, there shall be a minimum of 75 feet separation between rotor tips.
- Traffic control established (vehicle, personnel, and aircraft).
- Approach/departure paths and holding patterns shall be designated and known to all pilots.
- Dust abatement measures are taken.
- Minimum Touchdown Pad and Safety Circle Dimensions (see NSHO Chapter 8) shall be secured.

- Ground fill operations shall be initiated.
- Landing site shall be properly illuminated with:
 - Four corners of each landing pad should be marked with a NVG compatible color light stick or another lighting device.
 - Flashing/emergency vehicle lights may be used as navigational aids or target designators but should be turned off upon pilot's request.
- Parking Tenders shall have lighted wands to assist, as needed, in landings and takeoffs.
- Security measures (traffic control, bystander access, unauthorized personnel) shall be in place.

Helibase Organization

All positions associated with Night Helibase operations shall meet position requirements as identified by NWCG and the night operations task sheet. i.e. HEBM, ABRO, ASGS, AOBD.

A list of personnel with completed task sheets shall be sent to the Pacific Southwest Regional Helicopter Program Manager or Helicopter Operations Specialist for certification.

For night helibases with two or more helicopters a night HEBM and Night ABRO shall be assigned.

Helibase operations on Type 1 and Type 2 incidents requesting night water dropping helicopters shall have an AOBD and ASGS assigned. It is recommended that an additional dedicated Night AOBD or ASGS is assigned.

Water Drops

- A high-level reconnaissance for aerial hazards will be done over every fire.
- A “dry run” will be made before each series of drops in a new area looking for hazards and personnel.
- The siren will be used for live runs.
- The minimum altitude for water-drops will be fifty (50) feet above ground level (AGL) or canopy level, whichever is higher.
- Tight turns after drops should be avoided to prevent excessive rotor wash on the fire and to avoid spatial disorientation.
- Water-drops should not intentionally be made directly on fire suppression crews.

Dip Site Considerations:

When a dip site is utilized, it is recommended when possible, to have a the dip site staffed by ground personnel. For briefing, guidance, and checklist refer to *ICS-1800 Appendix J Dip Site Briefing Worksheet Checklist*. This document is intended as a tool to provide air operations personnel guidance in coordinating methods and conducting a comprehensive briefing on the procedures to be utilized to conduct dip site operations of tanked helicopters at night. Each of the items on this checklist must be identified, determined, addressed and/be established prior to commencing operations in order to ensure that personnel from every agency involved understand the details of the environment and processes that are to be used during that operational period. Below are the considerations found in the Dip Site Briefing worksheet checklist:

Determine the size, type, conditions, and hazards at the dip site.

- Dip site and surrounding area must be flown previously during the day, and/or receive and air-air briefing on the dip site as well as be led-in and shown all hazards by another operator that has previous experience at the intended dip site.
- The entire dip site and surrounding area must be carefully examined for potential hazards and each identified hazard must be mitigated prior to approving the night dip site.
- Whenever possible, pre-established night dips sites are the preferred method.

Lighting and aircraft configuration to be used.

- 30% or more moon illumination and/or good ambient lighting (no scintillation effect in goggles).
- Snorkel should be illuminated via steerable landing light, chem lights or LEDs.
- In lieu of snorkel lighting, a crew member / spotter on-board the aircraft, or a crew member on the ground with a radio, communicating to the pilot snorkel position is acceptable.
- High intensity searchlights, should be positioned far enough off to the side, so the pilot does not become overwhelmed by the direct illumination of the water spray created by the downwash.

Establish safe approach and departure paths, identify aerial hazards and identify useful landmarks.

- Night approach and departure paths should be established as per the NSHO (same as daytime operations).
- Approach and departure paths must be safely inspected to identify potential aerial hazards.

- All potential aerial hazards should be depicted on a Hazard Map and communicated to the flight crews.
- Landmarks that are visible to the pilots should be identified for use as potential reporting points.

Establish wind-shift decision points and change of direction procedures

- Wind shifts during night operations should be anticipated.
- Wind vector limits across the dip site should be established.
- Adequate pilot reference as well as approach and departure paths need to be re-evaluate.

Multiple aircraft operations, and communications: Air-to-air communication and coordination with the other aircraft.

- Use standard dip site self-announce procedures on pre-established air to air frequency.
- Multiple aircraft at dip site, ensure that aircraft spacing allows ample time for aircraft to approach and depart and/or enough spacing that the water spray and downwash does not interfere with corresponding aircraft.
- Consider geographic check points.
- Flight following will be maintained by radio communication with incident personnel and/or Automated Flight Following (AFF) with agency or incident Communications.

Identify check points to be used to manage spacing and sequencing into and out of the dip site.

- Highly visible landmarks that are easy to recognize under night vision goggles should be identified as reporting points.
- Check points should be selected that provide the water point personnel enough reaction time to communicate effectively with the approaching helicopter.

References: Pilot hover references

- Shorelines and/or other highly definable references shall be constantly maintained for every phase of flight, approach, hover and departure.
- No "open water / water only reference" operations are allowed.
- References more than 3 rotor discs away are not advisable.

After Action Review

It is essential to learn from mistakes and to capitalize on successes. The price for failure can be exceptionally high, and the amount of effort put into successes is often left unrecognized. The objective of the After Action Review (AAR) is to identify these successes and failures immediately. Once they have been recognized, further exploration allows the team to perfect its skills and be better prepared for future endeavors.

After each fire, an AAR will be completed and documented in a log. An AAR for Aviation Operations follows the standard AAR format of what was planned, what happened, why it happened, and what can we do better next time, with some helpful additional talking points.

Chapter 3 Night Rotor Wing Aerial Supervision

NVG HLCO Training

Embracing nighttime Helicopter Coordinator (HLCO) operations in Region 5 will significantly boost firefighting effectiveness and enhance the protection of people, property, and natural resources from the increasing threat of wildfires. A key component in achieving this is allowing U.S. Forest Service (USFS) employees who meet the prerequisites to train not only with USFS endorsed HLCO but also with interagency partners to achieve an interagency certification standard. This will ensure our personnel are adequately prepared to perform their missions of Night HLCO.

1. Prerequisites, Training, and Certification:

- **Prerequisites:**
 - Employees must satisfy specific prerequisites before starting Night HLCO training.
 - Candidates must be certified as National Wildfire Coordinating Group (NWCG) Aerial Supervisor (ATGS or HLCOs) for a minimum of two years and have completed a minimum of 100 flight hours as a qualified HLCO.
 - An annual letter of delegation identifying Night HLCO qualified, trainee personnel and approved Cooperator aircraft shall be drafted, finalized, and administered by the R5 Regional Aviation Officer
- **Training:**
 - Training will be conducted exclusively by NWCG qualified HLCOs who have met all prerequisites and received endorsement from their supervisor, along with concurrence from the Regional Aviation Officer (RAO).
 - Training will include classroom instruction, ground drills, and airborne exercises. Training sessions may or may not occur on active incidents.
 - Night HLCO operations involving USFS R5 employees shall only be conducted on Forest Service protection or Unified Command fires.
- **Certification:**
 - Upon successful completion of the NVG HLCO training, a letter of completion will be issued by the Region 5 Helicopter Program Manager (HPM).
 - A list of certified Night HLCOs will be maintained by the Regional HPM.

2. Training Execution:

- **Training Delivery:**

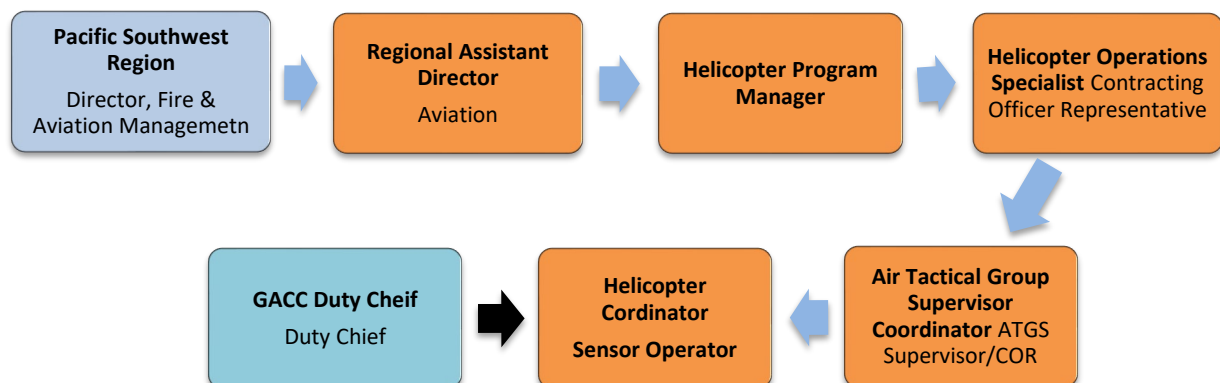
- Training will be provided by Fully Endorsed-Night HLCOs utilizing contracted aircraft that are interagency carded and meet the requirements for Night Vision Goggles (NVG) operations and passenger transport. Details of these aircraft will be included in the cooperator letter.
- All pilots must be interagency carded for Night NVG Operations to ensure safety and compliance.
- **Training Standards:**
 - All training will adhere to interagency NVG training standards as approved by USFS Region 5, CAL FIRE, and Firescope (refer to Appendix E).

By following these outlined procedures, Region 5 aims to elevate firefighting capabilities, enhance safety, and safeguard resources through effective nighttime operations.

Mission Configuration

Night HLCO is the combination of a contracted Type 3 helicopter and a qualified Helicopter Coordinator who has completed additional training related night aerial supervision as well as Night Vision goggle operations.

Organization



The Night HLCO's will read and understand the PSW Night Helicopter and Night Aerial Supervision Plan and the night HLCO aircraft contract.

- FIREScope Night Flying Guide (ICS 800)

Carry an enhanced HLCO kit with an illumination device. Examples of some illumination devices used are:

- Flashlight
- Headlamp with or without color filter
- Penlight with light and ink on the same side of the instrument
- Kneeboard light
- Lip/Mic light

The Assistant Helicopter Operations Specialist / HLCO Program Manager (HLCO PM) will maintain the staffing schedule of the night HLCO's. The HLCO PM will make every effort to avoid a simultaneous pilot/HLCO change-out. It is the responsibility of the assigned HLCO to request a resource order for their relief through the assigned Emergency Communication Center (ECC) using established processes. This should be completed at least three days in advance of reporting date and time.

Incident Response

The USFS applicable Operations Area Duty Chief is the authority for all mobilizations of Night HLCO. The dispatching/hosting ECC will contact the assigned HLCO and provide a complete FC-106 dispatch form with incident contact (telephone and email) information before the aircraft will respond. Inflight divers will be given in the same format, and "blank" FC-106 forms are kept on the aircraft for this purpose. In addition to monitoring incident frequencies, Air Guard (168.6250 RX/TX, Tone 1: 110.9) should be always set on one radio. It is also recommended to monitor 122.925

The Night HLCO aircraft is mobilized in the same manner as a daytime Air Tactical Platforms. HLCO will coordinate with applicable Federal Aircraft desk and ECC at the beginning of each shift to status the asset and receive fire activity updates.

Daily preflight duties will contain the following elements:

- Load Calculations
- Manifests

- FRAT
- Night HLCO Briefing Check List

Requesting units that order night operational aircraft will have their ECC staffed in accordance with current R5 night dispatching procedures (Appendix C)

- Normal duty day for the resource is 12 hours.

Helicopter Pilot flight time (including day, night and NVG) will not exceed a total of six (6) hours per shift

- Established availability hours are 1600 – 0600, adjustment must be requested and approved by the Helicopter Program Manager or their designee.
- Avoid calling HLCO personnel when they are off duty to ensure 8 hours of uninterrupted rest.
- The night HLCO pilot has a maximum duty day of 14 hours of which six can be flight hours
- With the exception of takeoff and landing, HLCO's conducting flights during nighttime (outside of civil twilight hours) shall not descend below 500 feet AGL.

Aircraft / Pilot carding

All contracted aircraft shall be interagency carded and meet the requirements for Night Vision Goggles (NVG) operations and Non-qualified crewmember transport. In the case of a cooperator aircraft, a Cooperator Letter outlining approval for NVG Operations, Essential Crewmembers & Non-qualified crewmembers transport, and HLCO must be available.

All pilots must be interagency carded for Night Vision Goggles (NVG) operations and Non-qualified crewmember transport to ensure safety and compliance. In the case of a cooperator pilots, a Cooperator Letter outlining approval for NVG Operations, Essential Crewmembers & Non-qualified crewmembers transport, and HLCO must be available

Pilot Duties and Responsibilities

NVG Helicopter Pilots are an essential part of any aviation mission and must be made an integral part of the team effort whose objective is flight safety. The Pilot is in command of the aircraft and has ultimate responsibility, under both Federal Aviation Regulations and agency regulations, for the safety of the aircraft and its occupants the Pilots shall;

- Have a current interagency card showing qualification for Night Flying.
- Attend Night Flying training annually using the training syllabus in the NFG (ICS- 800).

If a night flight has not been accomplished in the last 25 nights, the Pilot shall maintain currency by participating in a currency flight which may utilize the NVG water dropping helicopter. This currency training will be documented in the daily diary. See contract for authorization of currency flights for vendor Pilots.

In addition to all duties and responsibilities listed in Chapter 2 of NWCG Standards for Helicopter Operations (NSHO), for Night Operations the Pilot shall:

- Complete Night Flying Operational Period Checklist (Appendix A)
- Complete the GO/NO-GO Checklist for every NVG Flight Operation (Appendix A)
- Sign the GO/NO-GO Checklist (Appendix A)
- Attend Night Flying training annually in accordance with Firescope Night Flying Guidelines ICS-800

Incident Operations

The number one priority of this resource is incident airspace management. When supervising aircraft operating with the aid of NVG's, aerial supervisors shall be vigilant of any formation or inflow of fog or low clouds as NVG's do not see fog forming or encroaching. This includes travel routes to and from bases of operation and dip sites. The Night HLCO will advise any aircraft operating with NVGs of any fog or low cloud situations. Assume they are on NVG and cannot see the hazard.

The Night HLCO crew shall use caution to avoid flying into smoke column(s). Smoke columns may be hard to detect at night when there is little ambient light. The PIC and HLCO shall be extra cautious of hazardous terrain, aerial hazards and must avoid losing situational awareness.

If an alternative base is the best option between flight legs during a shift the flight crew should exercise that option and coordinate with water dropping helicopters.

Duty Day and Transitions

It is important to understand that duty day has a significant impact on the utilization of the Night HLCO. “Early Up’s,” shifts beginning before established start time, should be avoided as much as possible. For extended attack/large fires every effort should be made to have Night HLCO arrive on the scene of the incident with enough daylight to assess hazards, terrain, fuel, fire behavior and aerial firefighting activity (familiarization flight). This flight does not need to be any longer in duration than necessary to receive a briefing from the day aerial supervision platform(s). It is common to be requested over an incident to gather situational awareness and conduct a briefing to Operations before the morning briefing at ICP(s). This usually occurs between 0500-0600 hours. When practical the Night HLCO should have a Night to Day transition with the first day Air Attack/HLCO. Duty day and cumulative flight hour management can affect the opportunity to have a transition with the “first up” day air attack and the ability to provide constant coverage during critical incident operations. Adjustments to the daytime air attack duty day should be made to accommodate these important transitions.

Maintenance

When maintenance is performed on the aircraft (routine or unscheduled) contact a USFS maintenance inspector before resuming flight activities.

- Region 5 Airworthiness Duty Line 916-640-1040 (Always call this first)
- Jared Daly (R-5 AMI alternate) 530-338-9829

Unscheduled maintenance of any type, aircraft incident/incident with potential shall be reported to the ECC, GACC, and AMI listed above and the contract COR. SAFECOM’s shall be completed as soon as the issue is known. The corrective maintenance action(s) and return to contract availability will be approved by the responsible AMI.

Night Vision Goggles (NVG)

High levels of NVG proficiency, along with a well-balanced NVG experience base, will help to offset many of the visual performance degradations associated with night operations. NVG experience stems from proper training coupled with numerous NVG flight operations. An experienced NVG crewmember should be acutely aware of the NVG operational envelope and its correlation to various operational effects, visual illusions and performance limitations. Continued exposure during the NVG recurrent training will help strengthen and solidify this experience base. NVG currency training needs to include ground evolutions and flight training curriculum.

Currency training shall be conducted at least every 25 days for Night HLCO. It is recommended that night operations training be coordinated with the other night flying assets to enhance the proficiency experience.

Initial and Annual NVG training for every NVG HLCO will be from an FAA approved NVG instructor and will cover all elements in FIREScope's Night Flying Guidelines (NFG).

A list of appropriately trained and documented NVG HLCO's shall be sent to the Pacific Southwest Regional Helicopter Program Manager for certification.

Proficiency Flights

Proficiency flights ensure the Night HLCO crew, aircraft and equipment are operational. Night HLCO's and Pilots who have not flown a mission within the past 25 days may perform these flights (up to one hour). Before the flight, ensure the Night HLCO Mission Aviation Safety Plan (MASP) is complete and provided to the controlling ECC. Proficiency flights will include the following tasks:

- Complete a FRAT
- Utilize the MASP for crew mission briefing
- Perform a pre-flight walk around
- Preflight checklist as requested by the pilot
- Power up and operate Sensor
- Initiate standard flight following procedures
- Communicate terrain avoidance measures with pilot
- Assess elevation(s) of FTA
- Assess aerial hazards in the FTA
- Confirm avoidance of smoke column with Pilot
- Confirm onboard computer system is operational
- Consistently assess for fog formation
- Proper shutdown and stowing of system

- Conduct AAR
- Document training flight narrative in Daily Diary

Training flights can be independent of the water dropping helicopters, but it is highly encouraged to participate in water dropping helicopter proficiency/training flights.

HLCO Demobilization

Fatigue management is a high priority in reducing unnecessary exposure to our employees. Employees will use the most effective methods of travel to reduce fatigue. Employees will adhere to work-rest guidelines when demobilizing from night HLCO assignments (2:1) work rest.

Authorized Non- qualified crewmembers

The only personnel approved to fly on board the aircraft during training and or operational flights are HLCO with completed Night training Job Aid and trainee's

Nighttime Operational Checklist / NVG Mission Go/No-Go Checklist (Document 1)

Page | 38

Pre-Flight Weather Observation (Document 2)



(Document 2)

Pre-Flight Weather Observation

To be completed prior to any nighttime flight

Date:			Time:			
Pilot PIC:			Pilot SIC:			
Manager:			Illumination:			
Dispatch / Mission Information:						
Departure	Ceiling	Visibility	Wind	Temperature	Dew Point	Altimeter
Destination	Ceiling	Visibility	Wind	Temperature	Dew Point	Altimeter
En-route	Ceiling	Visibility	Wind	Temperature	Dew Point	Altimeter
Alternate	Ceiling	Visibility	Wind	Temperature	Dew Point	Altimeter
Weather Comments:						

Flight Risk Assessment Tool (FRAT) (Document 3)

Day Operations				
Risk Factors	Assessment Level			Assessed Value
	0	1	2	
Pilot Experience - Fire	> 5 Years	2-5 Years	< 2 Years	
Ceiling	> 1000'	< 1000'	< 500'	
Visibility	> 2 SM	1-2 SM	< 1 SM	
Wind Conditions	<15 Knots	15-25 Knots	< 25 Knots	
Guest Spread	0-5 Knots	5-10 Knots	< 25 Knots	
Temperature	<90	90-100	>100	
Density Altitude	<5000'	5,000'-8,000'	>8000'	
Fire Weather	No adverse Forcastet	Forcast T-storms, Red Flags	Active T-Storms, Red Flags	
Pilot Fatigue	<15 hrs	15-25 hrs	>25hrs	
Crew Fatigue (On shift days)	0-5 Days	5-10 Days	>10 Day	
Day Operations Total Risk Value:				● 0

Night Operations				
Risk Factors	Assessment Level			Assessed Value
	0	1	2	
Pilot Experience - Fire	> 5 Years	2-5 Years	< 2 Years	
Crew Experience (Lowest)	> 5 years	1 - 5 Years	< 1 Year / (3) Not regularly Assigned Crewmember	
Ceiling	> 1000'	< 1000'	< 500'	
Visibility	> 10 SM	3 - 10 SM	> 1 SM	
Wind Conditions	<15 Knots	15-25 Knots	> 25 Knots	
IIMC Recovery Airfield Availability	Within 30 Minutes Flight Time	Within 1 Hour Flight Time	Over 1 Hour Flight Time	
Lunar Illumination	50 - 100% Illumination	30 - 50% Illumination	0 - 30% Illumination	
Time of Mission	Sunset-1200	1200-0300	0300-Sunrise	
Performance Planning (HOGA Payload)	<50%	50-75%	>75%	
Pilot Fatigue (36/6 Flight Time)	<15 hrs	15-25 hrs.	>25 hrs	
Crew Fatigue	0-5 Days	5-10 Days	>10 Days	
Night Operations Total Risk Value				● 0

Lunar Illumination:		Moonrise:		Moonset:
Risk Value Definitions		Specific Risk and Mitigation Strategy Detail		
Low to Medium	0 - 12	Review all crewmember's crew rest fitness/fatigue.		
Elevated	13 - 18			
High	> 18			
1. Utilize worst-case information for risk valuation. 2. Update this information continually for a current situation summation, and discuss updates with the crew. 3. A High Risk value requires Incident Commander, Operations section Chief approval				

Checklist for Multiple Resources, Helibase (Document 4)

NIGHT SUPPLEMENT HELICOPTER OPERATIONS BRIEFING/DEBRIEFING CHECKLIST,

This supplement is to be completed in addition to HBM-00

Checklist Item		Insert Date for Next 7 Days:						
I. Organization and Personnel		Check Off Box when Briefing Completed:						
		1	2	3	4	5	6	7
A	Pilot, aircraft and support personnel meet agency requirements.							
B	Overhead Responsibilities and Authorities identified							
C	Helibase personnel assignments established							
II. Communications		Check Off Box when Briefing Completed:						
		1	2	3	4	5	6	7
A	One uncongested air-to-ground frequency has been established.							
B	Radio frequencies and call signs have been posted at the helibase and relayed to the pilots and all helibase personnel.							
C	Communications plan have been tested (including establishing contact with night ATGS/ HLCO) and are fully operational.							
D	All helicopter radios are compatible with the communication plan							
E	Flight Following Procedures established							
F	Flight routes and check points identified							
III. Flight operations		Check Off Box when Briefing Completed:						
		1	2	3	4	5	6	7
A	All Assigned / participating Aircraft and identifiers identified							
B	Area Flight Hazards identified and briefed							
C	Overhead and Pilots warned of danger of directing drops directly on Crews							
V. NAOP Required Forms completed		Check Off Box when Briefing Completed:						
		1	2	3	4	5	6	7
A	Nighttime Operational Checklist / NVG Mission Go/No-Go Checklist							
B	Pre-Flight Weather Observation							
C	Flight Risk Assessment Tool (FRAT)							
D	Previous days safety problems discussed and mitigated.							
VI. Approvals		Check Off Box when Briefing Completed:						
		1	2	3	4	5	6	7
A	Nighttime operations meets engagement criteria and is Night Operations is approved							

Appendix B- AA-51 / FW 51 Forms

Proficiency/Training Flight Briefing, Intelligence Awareness and Assessment

IAA Proficiency /Training Flight Briefing checklist: The is to be reviewed and completed prior to any training flight.

<u>Mission Supervisor:</u> ATGS assigned to shift	<u>Alternate Mission Supervisor:</u> R5 FWOS/51 Program lead
<u>Mission Name</u> AA51 Mission Proficiency/Training	
Complete this with the flight crew before every training/proficiency mission	
<u>Mission Description:</u> Air Attack 51 Air Operations Training is intending to provide ongoing, verifiable and realistic flight training for Fixed Wing Pilots, Air Tactical Group Supervisors (ATGS) and Aerial Sensor Operators (ASO). <u>Mission Objectives:</u> • Classroom and ground training • Navigation and mapping • FLIR 380HDc • Data recorder use • Data transfer and delivery • AAR/Debrief ☐ <u>Identify Location of Mission Area:</u> Air Attack 51 air operations trainings will be within predetermined boundaries identified by the Mission Supervisor and Mission Pilot. ☐ <u>Aerial Hazard Analysis:</u> Review Flight Hazard Maps, weather & monitor appropriate ATS. ☐ <u>Coordinate Proficiency Flight Plans with ECC or GACC:</u> Ensure local dispatch center has the proficiency flight plan and all frequencies are determined for the mission. ☐ <u>Complete Pacific Southwest Regional Daily Operational Risk Assessment (DORA):</u> Should the risk level calculate in the medium or high range, do not proceed with the proficiency/training flight until the identified procedures on the DORA are mitigated. ☐ <u>Temporary Flight Restrictions (TFR) in the planned flight area?</u> ☐ <u>Military Training Route(s) (MTR'S) or Military Operating Area(s) (MOA'S):</u> Mission Supervisor and Mission Pilot will review local MTR's and MOA's during planning of the proficiency/training flight. ☐ <u>Aircraft Performance Planning:</u> The pilot is responsible for the accurate completion of load calculations. These are performed at the start of every shift and entered into the shift diary.	

- ☐ **Personal Protective Equipment:** * Always refer to current SAS, ALSE, and 5700 manual direction*
- ☐ **Perform a pre-flight walk around**

Aircraft Justification for Mission: Air Attack 51 Operations training will be in accordance with the NWCG Standards for Airspace Coordination and the National Standards for Aerial Supervision (SAS).

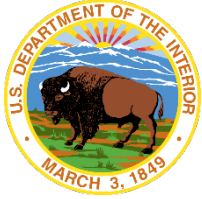
Flight Following And Frequencies:

Confirm frequencies during briefing prior to flight

FAA Flight Plan (chartered aircraft non-agency controlled mission) no frequencies required

Flight Following Method: AFF ☒ Radio (Local or GACC aircraft desk) ☒
 FAA Flight Plan: (Agency-owned or agency contracted aircraft mission) ☐

FM Receive: TBD	FM Transmit: TBD	RX: Choose an item. TX: Choose an item.
Nat F.F. Rx: 168.650	FM Transmit: 168.650	Tones: 110.9 TX and RX
FM Receive: TBD	FM Transmit: TBD	RX: Choose an item. TX: Choose an item.
FM Receive: TBD	FM Transmit: TBD	TX: Choose an item. RX: Choose an item.
AM Receive: Victor (P) TBD	AM Transmit: TBD	No Tone



Interagency Aviation Information Bulletin



No. IA IB 21-02

May 25, 2021

Page 1 of 2

Subject: Geospatial Portal for Nightwatch, FireWatch Cobra and FireWatch 51

Area of Concern: National Interagency Fire Enterprises Geospatial Portal (EGP)



Distribution: All Aviation Activities

Discussion: All data collected and processed for Fire Managers and Incident Management Teams by the FireWatch Cobras, NightWatch (Air Attack 51) and FireWatch 51 will be joining the National Interagency Fire Enterprise Geospatial Portal (EGP) starting fire season 2021. All intel collected from these three aircraft will be accessible only in this portal. The Cobra Program, NightWatch and FireWatch 51 programs will share a folder labeled “FireWatch” within EGP.

What will you need to do to access the data

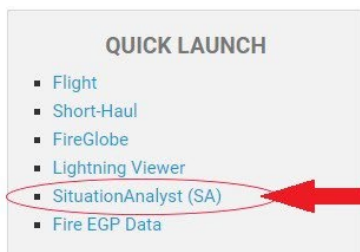
Request an EGP account at egp.nwcg.gov.

Sign up using your government email address. All requests for EGP accounts are vetted by agency personnel for approval. Using your government email address assures a quick and easy process.

Once you have an account use the EGP ‘How to’ document below to navigate to the aircraft intel tool for data viewing and data download.

Below is a brief outline on how to access imagery products in the EGP

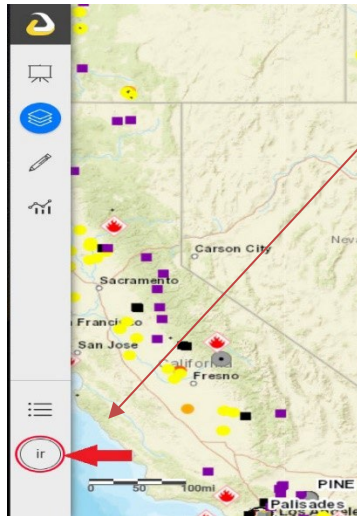
1. Login to the EGP and Open the [SituationAnalyst \(SA\)](#)



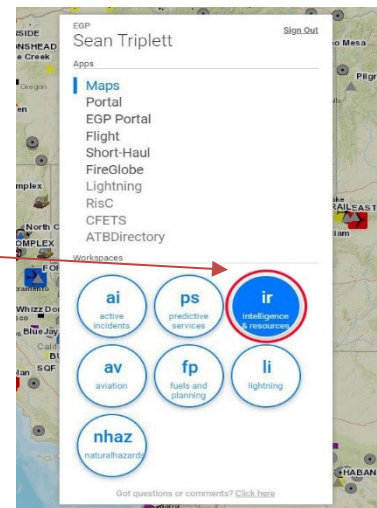
The Fire EGP provides standardized geospatial information for the full range of wildfire activities ranging from response to planning, and leverages a [central source of spatial data](#) for mapping, decision support, business intelligence, and situational awareness.

2. Once the **SituationAnalyst (SA)** page loads, **click** on the “ai” button on the lower left side of the application.

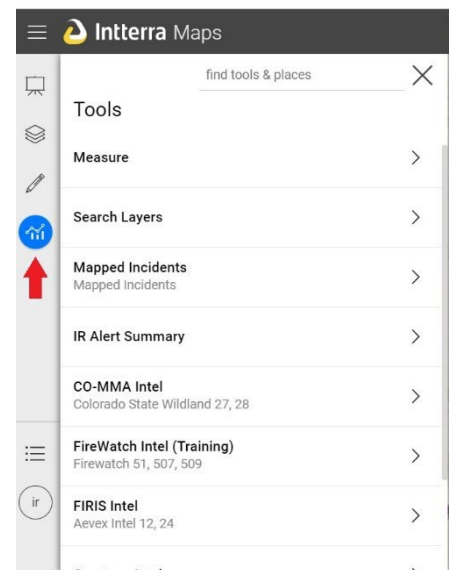
3. A new screen will launch. **Click** the “ir – intelligence & resources” button.



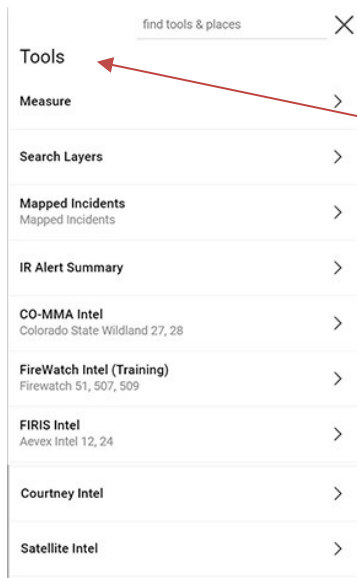
4. The SA Tool will refresh and load additional datasets. Let this process complete. Note: The “ai” button in the lower left has refreshed to “ir”.



5. Once the IR Workspace has refreshed, click on the Tools button which is on the top 1/3 of the panel, left side of the application.



6. A new menu will display of Tools available. Select the Tool that has the information you are searching for.



From this point follow the directions located on the following website for Aircraft Intel resources:

<https://intterra.helpdocs.com/operations/airborne-intel-tool>

For additional questions, please contact: D. Scott Smith (530) 307-9171 or david.s.smith@usda.gov

/s/ **Keith C. Raley**

Keith C. Raley
Chief, Aviation Safety, Training, Program
Evaluation, and Quality Management
DOI, Office of Aviation Services

/s/ **Lori Clark**

Lori Clark
Detailed Branch Chief - Aviation Safety
Management Systems
USDA, Forest Service

Appendix C

Region 5 Night Air Operations Mobilization and Notification Procedures

The Forest Service Night Air Operations (NAO) will support wildfire suppression on Forest Service-protected lands within and adjacent to the Angeles, Cleveland, and San Bernardino National Forests, the Southern half of the Los Padres and the Southern half of the Sequoia National Forests. The NAO aircraft will also support wildfire suppression including wildland-urban interface areas within and adjacent to the forests, within a range of their primary bases of one (1) hour flight time. The one (1) hour flight time is based on 90 nautical miles for the helicopter and 240 nautical miles for the air attack. Maps depicting a one (1) hour flight time for the NAO helicopter and air attack are on pages 5-6 of this procedure.

Before committing night air operation resources outside the above-approved locations, approval must be granted from the Operations Southern California, Geographic Area Coordination Center (GACC) Duty Chief. The approval or denial of the request will be documented on the resource order by the GACC. The Unit making the request must ensure there is adequate staffing in dispatch. All aircraft should be dispatched by a qualified aircraft/aviation dispatcher or under the direct supervision of a qualified aircraft/aviation dispatcher. If a qualified aircraft/aviation dispatcher is not immediately available, a qualified initial attack dispatcher (IADP) may dispatch aircraft for the night operations, flight following, and in case of an emergency. The GACC Federal Aviation Duty Officer will ensure the appropriate dispatch organization is in place before the NAO aircraft launches to the incident.

If the air attack is dispatched outside of the pre-approved area and they return to their home base, they will be released each morning, reordered and reapproved by the GACC Duty Chief.

The following procedures and responsibilities will be followed at all times:

When a Mishap Plan is initiated for a mishap or an accident the GACC Federal Aviation Duty Officer will be notified by the ECC (see contact list for phone number).

For all planned need mapping missions for the NAO Air Attack, the host ECC will ensure that there is an incident contact name and phone number included in the resource order. This will allow the ATGS to contact the incident directly to determine and discuss incident needs.

Angeles National Forest, Emergency Communication Center (ECC):

The Angeles ECC will notify the GACC Federal Aviation Duty Officer anytime there is a status change with NAO aircraft and when the NAO aircraft are dispatched to an incident (see contact list for phone number) and provide the following information:

- Incident name, incident number, geographical location, latitude, and longitude, identify which night air resources are being committed and any other mission or incident pertinent information.

When night flying aircraft are canceled or back on base, ANF ECC will notify the GACC Federal Aviation

Duty Officer.

Ordering Process for the Night Air Attack ATGS and Support Personnel:

The current ATGS or support personnel will order their relief at least two days before their relief is required to travel. The order will be communicated by e-mail to the ANF ECC and the GACC as outlined in the Night Air Operations Air Attack Operating Plan. The e-mail will contain the pertinent information to process the resource order, including the name request, qualification of the individual, their home unit or current assignment, date and time needed, the reporting location and special instructions.

ANF ECC will order individual overhead as an “O” number on a preposition order, then roster the aircraft once the individual is in place with the aircraft.

In cases where the air attack is not at their home base or assigned to the ANF, the GACC will request through the incident ordering point (host dispatch) an “A” subordinate number for the requested personnel, and then place that order to the ANF for the fill.

When the night air attack (AA-51) is mobilized to an incident, the individuals will then be “A” number under the aircraft (rostered).

Preapproved Units:

The requesting ECC will request AA-51 and H-531 direct from ANF ECC. When requesting night-flying aircraft, the requesting ECC will provide the required information pursuant to FC-106 California Interagency Aircraft Dispatch (CIAD). Immediately after making the request for night flying aircraft, the requesting ECC will follow up with the resource requests direct to ANF ECC. If H-531 is requested, the on-duty helicopter manager will determine primary and secondary water points (helispots) and advise ANF ECC. ANF ECC will then advise the requesting unit ECC of the primary and secondary water points (helispots) and the requesting unit will reference the Night Helispot Guide for any particular requirements (notifications, engine required, etc.) for those helispots.

Once the night flying aircraft have been requested from ANF ECC, the requesting ECC will notify the GACC Federal Aviation Duty Officer (see contact list for phone number) and provide the following information:

- Incident name, incident number, geographical location, latitude, and longitude, which night flying resources are being committed and any other mission or incident pertinent information.

When the night flying aircraft are canceled or released, the host unit will notify the GACC Federal Aviation Duty Officer and ANF ECC.

The Hosting Unit Responsibilities:

Once night-flying aircraft are committed to a unit other than the ANF, the host unit ECC will be responsible for mobilization of night flying aviation resources. This includes receiving requests from the GACC for initial attack. The host unit ECC will have a nighttime dispatcher on-duty and available to dispatch NAO aircraft for initial attack.

The host unit ECC where the aircraft are assigned will be responsible for determining night dispatch procedures either directly with the aviation resource or with the incident they are assigned. The host ECC and incident will establish a point of contact for mobilization of the night-flying aircraft.

The requesting ECCs will request AA-51 and H-531 through the GACC when the night flying resources are not on their home unit. When requesting night-flying aircraft, the requesting ECC will provide the required information pursuant to or the FC-106 California Interagency Aircraft Dispatch (CIAD), and an incident report of conditions. Immediately after requesting for night flying aircraft, the requesting ECC will follow up with the resource order requests to the GACC. When H-531 is requested, the on-duty helicopter manager will determine primary and secondary water points (helispots) and advise the host ECC, who will advise the GACC, who will, in turn, advise the requesting ECC. The requesting unit should reference the Night Helispot Guide for any particular requirements (notifications, engine required, etc.) for those helispots.

When the night flying aircraft are canceled or released, the host unit will notify the GACC Federal Aviation Duty Officer.

GACC Responsibilities:

The GACC Federal Aviation Duty Officer will be the contact for all night flying mobilization (see contact list for phone number).

The GACC Federal Aviation Duty Officer will ensure the appropriate dispatch organization is in place before the NAO aircraft launches to the incident. The GACC Federal Aviation Duty Officer will deconflict the airspace with the military and relay the status of Military Training Routes (MTR) traffic to the sending and receiving ECCs. The GACC will also deconflict with National Infrared Operations (NIROPS). When the night air attack is assigned to incidents for mapping, the GACC will relay this information to NICC for deconfliction. When the NIROPS flight plan is received at the GACC, it will be forwarded to ANF ECC for the night air attacks awareness.

If a TFR or additional frequencies are needed, they will be requested through the GACC Federal Aviation Duty Officer and will be followed up with the resource order request to the GACC.

For all planned need mapping missions for the NAO Air Attack, the host ECC and GACC will ensure that there is an incident contact name and phone number included in the resource order. The GACC will place all planned need mapping orders in the resource ordering system, corresponding FC-106 Interagency Aircraft Dispatch(s) and incident priorities to ANF ECC so they could relay the information to the NAO air attack. The GACC will then retrieve all of the orders except the first assignment and place the resource orders to the correct unit ECCs in order the missions will be flown.

NOTE: If multiple initial attack requests for the night flying aircraft occur at the same time, ANF ECC will

call the GACC Federal Aviation Duty Officer, who will determine which incident will receive the aircraft based on the following Risk Assessment Prioritization and the incident report of conditions.

- What are the critical values at risk?
 1. Lives are or will be threatened.
 2. Structures are or will be threatened.
 3. Resources of significant value are or will be threatened.
 4. Excessively high suppression costs will be prevented.
- What is the chance the critical values will be impacted?
- What is the relative probability of success associated with the alternatives being considered?

The GACC Federal Aviation Duty Officer is responsible for Regional notifications to the pre-determined contact list of the NAO aircraft status and missions.

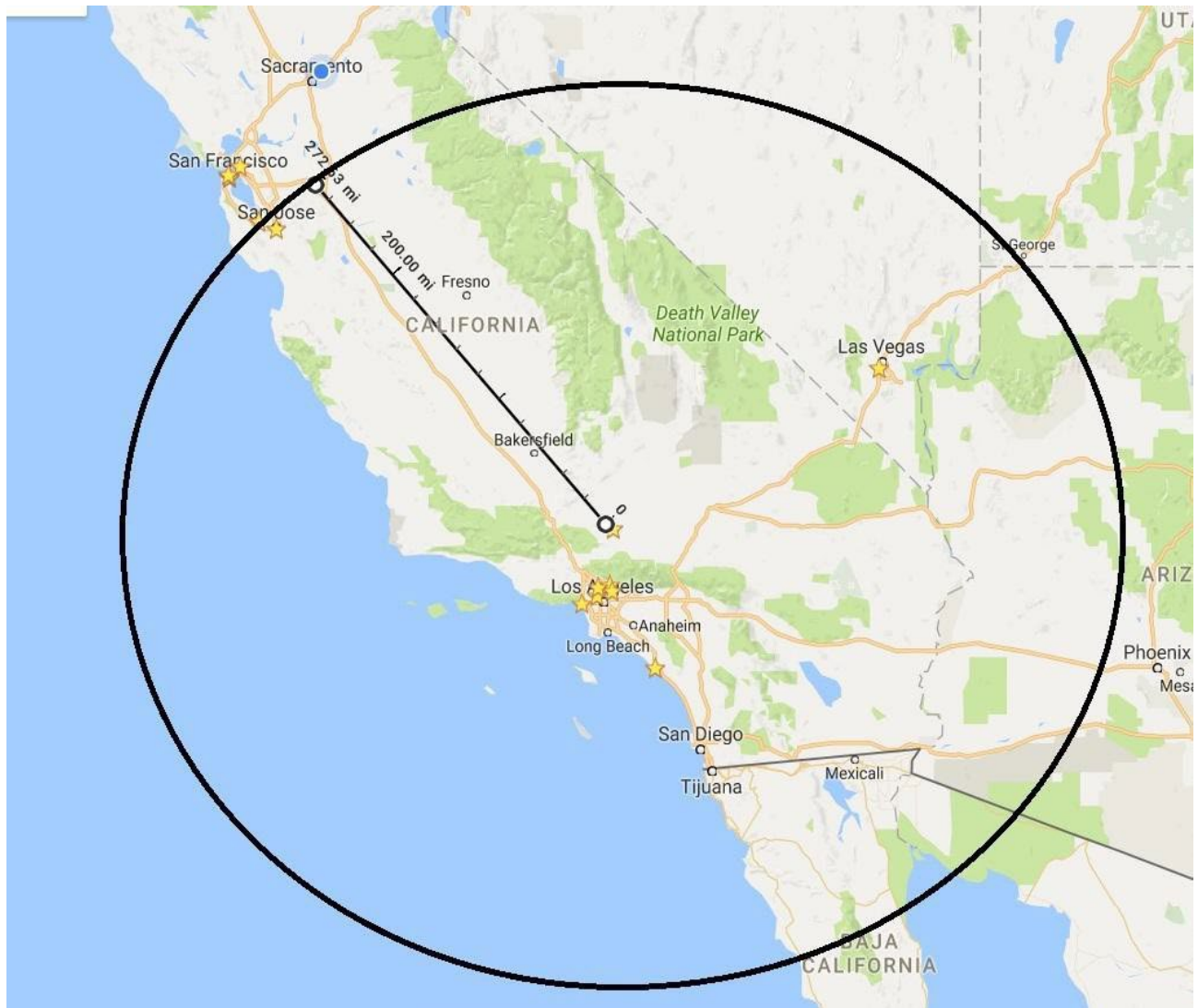
GACC Night Operations Contact List: GACC Federal Aviation Duty Officer: **951-320-2093**

If the GACC Aviation Duty Officer does not answer, the ordering ECC will call the GACC Duty Officer at **951-276-6725**.

GACC Aviation Duty Officer will notify the following via text:

NAME	POSITION	CELL NUMBER	UNIT	E-MAIL
Yolanda Saldana	Deputy Director	530-638-6378	R5	Yolanda.saldana@usda.gov
Josh Mathiesen	RAO	530-515-9272	R5	joshua.mathiesen@usda.gov
Lyndsay Johnson	ASO	661-565-6843	R5	Lyndsay.Johnson@usda.gov
Kyle Tolosano	Heli Prog. Mgr.	530-605-7334	R5	Kyle.tolosano@usda.gov
D. Scott Smith	Fixed Wing Prog. Mgr.(detail)	530-307-9171	R5	David.s.Smith@usda.gov
Matt Muller	HOS	916-767-9787	R5	matthew.p.muller@usda.gov
Josh Hutchison	HOS	916-709-6747	R5	Joshua.Hutchison@usda.gov
Casey Jones	HOS	559-696-3878	R5	casey.jones6@usda.gov
Anthony Herbert	NAO Prog. Mgr.(acting)	503-521-4854	R5	anthony.herbert@usda.gov
Jerry Spence	AS Prog. Mgr.	530-262-4733	R5	gerald.spence@usda.gov

NAO Air Attack One (1) hour Response Map, 240 NM from Fox Field



Night Air Operations Checklists

GACC Aviation Duty Officer: 951-320-2093

If the GACC Aviation Duty Officer does not answer, the ordering ECC will call the GACC Duty Officer at 951-276-6725.

Unit Dispatch (ECC) Checklist:

- | | |
|--|---|
| ☐ Requesting ECC is staffed for NAO | The requesting ECCs will request AA-51 and H-531 through the GACC when the night flying resources are not on their home unit. |
| ☐ Incident contact name and phone number in the resource order. | |
| ☐ Requesting ECC prepare FC-106 and call ANF/host ECC to relay new order information. ANF/Host ECC calls GACC Aviation DO and advises of a new request for night flying aircraft. | |
| ☐ Hosting ECC - Relay primary and secondary Helispots from the on-duty helicopter manager to the receiving ECC when mobilizing the NAO Helicopter. | |
| ☐ Receiving ECC - Reference primary and secondary Helispots for any particular requirements when mobilizing NAO Helicopter. | |
| ☐ If dispatched outside of the pre-approved area, release each AM | |

Relay all aircraft status changes to GACC Aviation Duty Officer, Including but not limited to

- ☐ New orders (including required Interagency Aircraft Dispatch information),
- ☐ Canceled/released back on base
- ☐ In/out of service
- ☐ In/Out of service mechanical

Mishap Plan Initiated –Notifications

- ☐ FAA Date/Time_____Person Notified_____
- ☐ Unit Duty Chief Date/Time_____Person Notified_____
- ☐ Unit Aviation Officer Date/Time_____Person Notified_____
- ☐ GACC Aviation D.O. Date/Time_____Person Notified_____

GACC Checklist

- ☐ Ensure ECC is staffed for NAO
- ☐ If requested from outside of the pre-approved area, GACC Duty Chief approval/denial is documented in the resource order.
- ☐ If dispatched outside of the pre-approved area, ensure night-flying aircraft are released each AM

Airspace Deconfliction

- ☐ Deconflict the airspace MTR's and relay to sending and receiving ECCs.
- ☐ Deconflict with National Infrared Operations (NIROPS), when NAO air attack is assigned to incidents for mapping.
- ☐ Forward NIROPS Flight Plan to ANF ECC or host ECC.
- ☐ Place all planned need mapping orders in resource ordering program, corresponding FC-106 Interagency Aircraft Dispatch(s) and incident priorities to ANF ECC so they could relay the information to the NAO air attack
- ☐ Retrieve all of the orders except the first assignment and place the resource orders to the correct unit ECCs in order the missions will be flown.
- ☐ Request Temporary Flight Restriction (TFR) from the FAA when ordered by the hosting unit ECC.

Regional Notifications

- ☐ GACC Aviation Duty Officer is responsible for Regional notifications to the pre-determined contact list of the NAO aircraft status and missions (new incident request, off base, back on base/released, etc.)

Multiple initial attack requests

- ☐ What are the critical values at risk?
1. Lives are or will be threatened.
 2. Structures are or will be threatened.
 3. Resources of significant value are or will be threatened.
 4. Excessively high suppression costs will be prevented.
- ☐ What is the chance the critical values will be impacted?
- ☐ What is the relative probability of success associated with the alternatives being considered?

Mishap Plan Initiated –Notifications

- ☐ Aviation Coordinator Date/Time _____ Person Notified _____
- ☐ GACC Duty Chief Date/Time _____ Person Notified _____
- ☐ Assistant Director Date/Time _____ Person Notified _____
- ☐ ASO Date/Time _____ Person Notified _____
- ☐ RAO Date/Time _____ Person Notified _____

Appendix D H-531 Night Operations Training and Procedures



Angeles Helitack Night Operations Training and Procedures

I. Standard Procedures – Night Operations

All training and actual deployment missions will use the following steps and procedures. The intent is to standardize and maintain continuity between units. Due to dynamic procedures all personnel will be clear of task, purpose, and end state, allowing for personnel to make decisions and take actions within; and should the situation warrant; take appropriate actions outside this procedure that may not be documented below.

A. Unloading aircraft procedures

1. Pre-flight duties
 - a. Load calculations, manifests, go/no-go checklist, weather checklist completed.
 - b. Goggles checked, donned, and adjusted.
 - c. Prior to departure, the pilot(s) and involved personnel shall receive a briefing on mission objectives, communications, known hazards, weather, and emergency/alternative procedures.

2. Loading I.A. cargo

- a. Left side cargo compartment checked and secured: (2) hose deployment bags, gated wye bundle, (1) 50' section of 2.5" (male end rolled out) hose, and fittings bag.
- b. Right side cargo compartment checked and secured – Crash Rescue Kit with an extinguisher (20lbs 40-B:C), gear-bag (I.A. gear, fire shelters), and tools.

3. Arrival to incident

- a. Pilots fly a reconnaissance of the area to look for hazards and coordinates with helicopter manager "HMGB" to select appropriate engagement criteria.
- b. Contact and relay criteria to appropriate flight following authority (IC, ATGS, HLCO, Dispatch, etc.) prior to commencing the night operation.
- c. Aircraft then flies to pre-determined helispot "Water-point."
- d. Upon landing, HMGB does a "thumbs up" with crew signifying:
 - i. Leader's intent is understood
 - ii. Crew is ready to depart aircraft.
- e. If no questions from the crew, HMGB informs the pilot's doors are "coming open" and "disconnecting" from ICS communications.
- f. HMGB and crew connect to handheld radios and safely exit the aircraft.
- g. Seat 10 HMGB and seat 8 crewmember exit the right side of aircraft while seat 6 crewmember exits left the side of aircraft. If the situation dictates the HMGB may choose to sit on the left side of the aircraft and switch with seat 6 crewmember.
 - i. HMGB is responsible for:
 - i. Performing a radio check with pilots and crewmembers.
 - ii. Safely relocating Crash Rescue Kit to marshaling location.
 - iii. Performs visual sweep of the area and setting up Power-Flares "pucks."
 - 1. (4) Pucks around aircraft 20'x 20' (solid low light).
 - 2. (2) Pucks as wind indicators 10' apart placed off the nose of aircraft identifying wind direction (slow blinking).
 - iv. Then assumes marshaling position with wands on.
 - v. Ensures water point set up is completed appropriately.
 - ii. Simultaneously seat 8 crewmember is responsible for:
 - i. Ensuring radio check between HMGB, crewmembers, and pilots are complete.
 - ii. Securing all flight helmet bags, satellite phone, and relocating bundle to marshaling location.

- iii. Securing right side of aircraft, relocating gear, and tools to marshaling location or area identified by HMGB.
- iv. Assisting seat 6 crewmember with water point set-up.
- iii. Simultaneously seat 6 crewmember is responsible for:
 - i. Ensuring radio check between HMGB, crewmembers, and pilots are complete.
 - ii. Unloading contents of the left side cargo compartment.
 - iii. Securing the left side of the aircraft.
 - iv. Relocate and utilize contents of fittings bag/hose deployment bags as necessary to safely complete water point set-up. Unused hose and fittings may be repositioned later as necessary.

4. Aircraft fill sequence (parking tender referred to as “water point” and crewmembers referred to as “fillers.”)

- a. Upon completion of initial trunk lay; crewmember at gated wye opens and closes the wye (away from a helicopter) to clear the line and then inquires with the pilots, “Ready for water?”
- b. Pilot(s) confirm if they are ready for water.
- c. Crewmember locks cam-lock into position and gives a hand signal to start the flow of water.
- d. Crewmember opens gated wye and filling of aircraft commences.
- e. Pilots chirp siren to signal adequate fill
 - i. Crewmember at gated wye closes it
 - ii. Crewmember at cam-lock ensures gated wye is closed and then disconnects cam-lock and secures fill hose under charged trunk lay several feet past gated wye
 - iii. Both crewmembers walk back to marshaling position
 - iv. Parking tender clears crewmembers out of safety circle.
 - v. When pilots advise that they are ready to lift,
 - i. On the first sequence: The parking tender states pertinent situational information. (E.g. wind direction, hazards, and clearance to depart at pilot’s discretion.)
 - ii. Every sequence following: The parking tender only states weather, hazards, and departing discretion if the situation has changed.
- f. When aircraft returns:
 - i. On the first sequence: The parking tender states pertinent situational information. (E.g. wind direction, hazards, and clearance to land at pilot’s discretion.)
 - ii. Every sequence following: The parking tender only states weather, hazards, and landing discretion if the situation has changed.

- ii. When on ground pilots will advise when they are ready for water.
- iii. Parking tender confirms and sends in the fillers
- iv. Fillers repeat sequence c – e
- g. Pilots sound a long siren to signal an emergency.
 - i. Crewmembers discontinue filling and exit towards marshaling position unless directed otherwise.

NOTE: HMGB's NVIS goggle will be removed and placed back into the helicopter as soon as practical.

B. Re-loading Cargo

- a. Parking tender guides aircraft in with wind direction, hazards, and clearance to land at pilot's discretion.
- b. HMGB is responsible for:
 - i. Gathering all pad lights and placing them back into the Crash Rescue Kit and then securing the bag into the right side cargo compartment.
 - ii. Ensuring all water point items are safely gathered, packaged, and secured back into aircraft.
- c. Seat 8 crewmember is responsible for:
 - i. Gathering, securing flight helmet bags, and satellite phone inside of aircraft.
 - ii. Securing a gear bag and tools into the right side cargo compartment.
 - iii. Assisting seat 6 crewmember with gathering and repackaging contents of the left side cargo compartment.
- d. Seat 6 crewmember is responsible for:
 - i. Gathering, repackaging, and securing all contents back into the left side cargo compartment.
- e. All personnel reconnect to ICS once onboard aircraft
- f. HMGB dons and adjusts NVIS goggles (if applicable).
- g. Crewmembers give a thumbs up to signify compartments, gear, and personnel is safely secured inside aircraft.
- h. HMGB then states readiness to depart.
- i. Pilots confirm and commence departure.

Proper authority (e.g., IC, ATGS, dispatch, etc.) is notified that the crew has been extracted from the helispot.

Appendix E Night HLCO Training:

Night HLCO Prerequisites

1. Completion of C-374 or C/S-378 and;
2. 2 Years as a qualified Aerial Supervisor (ATGS or HLCO)
3. 100 hrs of HLCO operations as a qualified HLCO

Table 1. Night HLCO Qualification Plan Event	Hours
Night Vision Goggles (NVG) Curriculum (Table 2)	8
NVG Initial Flight (Table 2.1)	3
Night HLCO Curriculum (Table 2.2)	4
NVG Training Flight – 3 Evolutions (Table 2.3)	9
NVG HLCO Qualification Flight (Table 2.4)	3
Minimum Total Training Hours	27

Note: A minimum of 10 hours of flight time is required. See * items below.

Table 2. NVG Curriculum Course Outline	Hours
Course Introduction	0:15 hrs.
NVG Nomenclature & Physiology	1:30 hrs.
Spatial Disorientation & Visual Illusions	1:30 hrs.
NVG Terrain Interpretation	1:00 hrs.
Night Fire Suppression Policy & Procedures	1: 00 hrs.
NVG Preflight, Use, and Maintenance	1:00 hrs.
Crew Resource Management (CRM) & Emergency Procedures	1:00 hrs.
Aircraft Lighting & Systems	0:45 hrs.
Total	8:00 hrs.
Table 2.1 NVG Initial Flight Night Aircraft Preparation/Orientation	1:00 hrs.
NVG Introductory Flight	2:00 hrs. *
Total	3:00 hrs.
Table 2.2 Night HLCO Curriculum Course Outline	Hours
Introduction & Orientation	0:15 hrs.
Roles, Responsibilities, & ICS Organization	0:30 hrs.

Pre-Mission Assignment	0:30 hrs.
Helicopter Capabilities & Limitations	0:15 hrs.
Airspace Coordination & FTA	0:30 hrs.
Helicopter Strategies & Tactics	0:30 hrs.
Incident Within an Incident (IWI)	0:15 hrs.
Navigation	0:15 hrs.
Communication & Avionics	0:15 hrs.
Military Helicopter Use Operations	0:15 hrs.
Aircraft Safety	0:30 hrs.
Total	4:00 hrs.

Following the HLCO Curriculum, an NVG training flight is conducted.

Table 2.3. NVG Training Flight – 3 Evolutions Aircraft Coordination	
Aerial Resource Tactics & Strategies	
Target Description	
Routes & Patterns	
Hazard Identification	
Off-Airport Landing Zones	
Confined Area Landing Zones	
CRM Development	
Inadvertent Instrument Meteorological Conditions (IIMC)	
Emergency Procedures	
Total (3 training evolutions 3 x 2 = 6 flight hours)	6:00 hrs. *
NVG Training Flight After Action Review	3:00 hrs.

Following the NVG Training Flight, an NVG qualification flight is conducted.

Table 2.4. NVG HLCO Qualification Flight Night Aircraft/Flight Crew Introductions & Orientation	
Night Air Operations Briefing (OSC or AOBD)	
NVG & Aircraft Preparation for Night Flight	
Flight Risk Assessment Tool (FRAT)	
Review Air Operations Maps, IAP, & associated documents	
Adherence to NVG policy & procedures	
FTA coordination	
Ground resource coordination	
Execution of incident priorities, strategies, & tactics	
Coordination of Incident Within an Incident (IWI)	
Assist with and execute an NVG emergency procedure	
Total	2:00 hrs. *
NVG Training Flight After Action Review	1:00 hrs.

Definitions

Aided Night Flight: An aided Night flight is a flight where the pilot of an aircraft uses night vision goggles (NVG) to maintain visual reference to the surface.

Aviation Safety Management Systems: The formal, top-down business-like approach to managing safety risk. It includes systematic procedures, practices, and policies for the management of safety (as described in this document it includes safety risk management, safety policy, safety assurance, and safety promotion).

Established Water Point: A water point that is staffed and being utilized for ground fill operations.

Flight Risk Assessment Tool (FRAT): A daily or flight-dictated component of the continuous systematic process of identifying and controlling risk in flying activities. FRAT is a general term encompassing multiple tools, examples are Green, Amber, Red (GAR), and Operational Risk Management (ORM) worksheets.

Hazard: Any existing or potential condition that can lead to injury, illness, or death; damage to or loss of a system, equipment, or property; or damage to the environment. A hazard is a condition that might cause (an accident or incident).

Helicopter NVG Flight Operation: The portion of a flight that occurs during the time from 1 hour after sunset to 1 hour before sunrise where the pilot maintains visual surface reference using night vision goggles in a helicopter that is approved for such an operation.

Lighted Airport: An airport where runway and obstruction lighting is available.

Night Flying Guidelines (NFG): FIREScope's interagency document on Night Flying.

Nighttime: Nighttime means the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

Night Vision Device (NVD): Any electro-optical device that is used to detect visible and infrared energy, and provide a visible image. These include night vision goggles, forward-looking infrared, thermal sights, and low-level television.

Night Vision Goggles (NVG): NVG is a head-mounted, lightweight, and self-contained binocular appliance that amplifies ambient light. NVGs are worn by crew members and are used to enhance the crew member's ability to maintain visual reference to the surface at night. Goggles are an integral part of the overall Night Vision Imaging System, not the entire system.

NVG Flight Time: The flight time gained by a flight crew member during an NVG flight operation.

Quality Assurance: The process of verifying or determining whether products or services meet or exceed customer expectations. Quality assurance management includes planning and checking standards while quality controls are specific standards that mitigate risk.

Risk: The composite of predicted severity (how bad) and likelihood (how probable) of the potential effect of a hazard in its worst credible (reasonable or believable) system state. The terms risk and safety risk are interchangeable.

SAFECOM: Aviation Safety Communiqué, is to report any condition, observation, act, maintenance problem or circumstance with personnel or the aircraft that has the potential to cause an aviation related mishap. SAFECOM should also be used for reporting positive safety actions and mishap prevention measures. SAFECOM submissions can be accessed and submitted at www.safecom.gov.

Safety Risk Management (SRM): A formal process within the ASMS that describes the system, identifies the hazards, assesses the risk, analyzes the risk, and controls the risk.

Unaided Flight: Unaided flight is a nighttime flight that the pilot does not use night vision goggles.

Change Digest 2025,

The following changes were made to the 2024 plan

Pg. 14 removed ANF 2024 Crew Org Chart

Pg. 15 Added a paragraph on Type 1 CWN HMGB Staffing

Pg. 16 Added a paragraph on currency requirements

Pg. 17 Removed paragraph on currency requirements its now in pg 16

Pg. 17 Added to paragraph on NVG Manager to include “Administrative”

Pg. 18 Removed redundant paragraph on currency require

Pg. 19 bullet on hover fill only was removed

Pg. 19 Added bullet on dip site safety parameters for night operations

Pg. 21 Hosting Unit responsible for having list of Pre approved dip sites and helispots

Pg. 26 added dip site considerations section

Pg. 30 reworded NVG HLCOs training

Appendix changes

Added new day/night FRAT

Removed FW/ AA 51 Risk assessment its now housed in the NAO Risk Assessment Folder

Removed Firescope Night Dipsite Briefing worksheet checklist as its now referenced in CH 2 and linked to ICS-800