Incident Command System Publication

FIRESCOPE NIGHT HELICOPTER COORDINATOR
ICS 802

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This document contains information about the Incident Command System (ICS) component of the National Incident Management System (NIMS). This is the same Incident Command System developed by FIRESCOPE. Additional information and documentation can be obtained from the following source:

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PURPOSE

Provide guidelines for utilizing interagency aircraft for both night initial and extended attack operations on emergency incidents to enhance safety, operational effectiveness, and fiscal prudence.

SCOPE

This document provides guidelines for Pilots, Agency Aviation Managers, and Incident Command Personnel.

AUTHORITY

This document is designed to operationalize a component of the recommendations from the Governor's 2004 Blue Ribbon Commission Section One: Jurisdictional and Operational Barriers; Multi-Jurisdictional Recommendations; Item Five. The Commission recommends that all federal, state, and local forest firefighting agencies review their aircraft operation cut-off time and determine if there can be a window of flexibility to expand incident operational times while considering flight crew safety. Furthermore, these agencies should review technological capabilities to extend available aerial emergency response.

BACKGROUND

Lives, property, and natural resource values are threatened on a 24-hour basis. In specific situations, night vision image technology can be applied to aviation missions performed by public safety and natural resource agencies. Risk assessment and management principles coupled with night vision image technology can reduce the risk factors and increase the mission effectiveness of night-flying aircraft. This document intends to provide operational and informational guidelines and recommendations to best determine the safety and efficacy of night flying operations.

Risk assessment, risk management, and operational guidelines are captured in the ICS-800.

INTRODUCTION

Safety trend analysis and operator surveys have revealed that the Fire Traffic Area (FTA) congestion poses a significant threat to our collective aerial resources. As aerial firefighting operations have advanced to include routine night operations, the need for standardized safety, communications, and deconfliction protocols has become urgent.

To ensure an appropriate aircraft span of control, agencies must develop and maintain Helicopter Coordinator (HLCO) standards that operate seamlessly from day to night. Such standards increase situational awareness, which enhances the detection of unidentified hazards and significantly reduces inherent risk to air and ground operations.

RECOMMENDATIONS

As stated in the ICS-800, the agency having jurisdiction (AHJ) should comprehensively evaluate the need to conduct night-flight operations. This document intends to serve as a guideline(s) for interagency night helicopter coordination. If a night flying operation can be justified as per the ICS-800, the information contained in this document is recommended to be used for the following:

- Standardization and guidance for operators and fire-line management
- The evaluation of hazards and subsequent risk management in the night environment
- Provides critical guidance to Incident Commanders (IC) regarding the scope and appropriate use of aerial resources at night
- Enhance safety and operational effectiveness

DEFINITION OF NIGHT

Night is defined by the Federal Aviation Administration (FAA), via 14 Code of Federal Regulations (CFR) Part 1, as the time between the end of evening civil twilight and the beginning of morning civil twilight as published in the Air Almanac.

HLCO OVERVIEW

To build HLCO standards, clear and concise requirements must be established. The HLCO, both during the day and at night, is pivotal in facilitating the air-to-ground interface to execute the incident objectives and priorities. In addition to these foundational responsibilities, the HLCO can also recommend fire suppression tactics for ground resources and provide consistent updates on conditions. As airspace congestion increases, the need to track, manage, and evaluate the performance of aerial resources becomes even more critical. The HLCO can provide real-time intelligence gathering for the Incident Commander(s), enabling them to make informed decisions.

NIGHT HLCO QUALIFICATION

Appendix A contains the course plan, prerequisites, and training requirements to operate as a qualified night HLCO. The final evaluation shall be conducted by an evaluator who meets the criteria specified in each candidate's agency.

STANDARDIZED NVG EQUIPMENT TO OPERATE AS A NIGHT HLCO

The NVG aircraft lighting and night vision device specifications are listed in the Night Flying Guide ICS-800.

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APPENDIX A: JOB AID TASK SHEET

NIGHT HLCO TRAINING & QUALIFICATION

Date :_____ Trainee: _____ Instructor:_____

Pilot:_____

TRAINING OBJECTIVE: Training and Qualification

INSTRUCTOR(S): Annotate task completion by initialing each task block.

Tasks	Reference	Initials
NVG Prerequisites	Table 1	
NVG Curriculum	Table 2	
NVG Initial Flight	Table 3	
Night HLCO Curriculum	Table 4	
NVG Training Flight	Table 5	
Night HLCO Qualification Flight	Table 6	
NVG Training Hours – 10 hours (including flight evaluation). Training flights on actual incidents is highly encouraged.	N/A	

Event	Instructor	Pilot	Flight Time	Date	AAR
Flight 1					☐
Flight 2					☐
Flight 3					☐
Flight 4					☐
Flight Evaluation					☐

NIGHT HLCO COURSE COMPLETION STATEMENT

This is to certify that the trainee has satisfactorily completed all tasks and flight events of the Night Helicopter Coordinator (HLCO) Training Course and is hereby qualified as an NIGHT HLCO.

Flight Examiner/Instructor: _____ Date: _____

Table 1. Night HLCO Prerequisites

Night HLCO Prerequisites:
Completion of C-374 or C/S-378 and;
Qualified HLCO by agency requirements and;
Agency-endorsed candidate

Upon completing the Night HLCO prerequisites, a candidate may attend the Night HLCO Course.

The NVG aircraft lighting and night vision device specifications are listed in the Night Flying Guide ICS-800.

Table 2. Night HLCO Qualification Plan

Event	Hours
NVG Initial Training	8
NVG Initial Flight	3
Night HLCO Curriculum	4
NVG Training Flight – 3 Flights	9
Night HLCO Qualification Flight	3
Minimum Total Training Hours	27

Table 3. NVG Initial Training (ICS-800, Section II)

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 4. NVG Initial Flight

Flight Elements	Hours
Night Aircraft Preparation/Orientation	1 + 00 hrs
NVG Introductory Flight	2 + 00 hrs
Total	3 + 00 hrs

Table 5. 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 6. NVG Training Flight – (3) Flights

Flight Elements	Hours
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 x 2 flight hours = 6 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 7. Night HLCO Qualification Flight

Flight Elements	Hours
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

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APPENDIX B: ICS-802 NIGHT INITIAL ATTACK CHECKLIST

NIGHT FIRE SUPPRESSION – INITIAL ATTACK (COMMAND)

Incident Commander (Company Officer or Higher) or Aerial Supervisor

Night Operations Criteria

☐ **BEFORE** requesting a night aerial suppression resource, determine if the need meets at least one of the following criteria:

1. Immediate threat to human lives.
2. Immediate threat to structures.
3. Immediate threat to high-value resources and/or critical infrastructure.
4. The response would inhibit significant fire growth.

Ordering Criteria

☐ Order night fire suppression aircraft via the local ECC.

☐ Order Night HLCO if three (3) or more night fire suppression helicopters are ordered and expected to operate in the same area.

Flight Time Limitations

☐ Pilots are limited to the Agency Having Jurisdiction (AHJ) or own-agency flight time limitations for planning purposes, whichever is most conservative.

Night Operations Planning & Support

☐ Obtain information on the night flying operation:

1. Number of aircraft and type.
2. If three (3) or more night fire suppression helicopters are ordered to work the same area at night – night HLCO is required.
3. Area of operation.
4. Mission objectives.

☐ The Incident Commander approves night flying operations for each operational period.

☐ Inform all Branches and Divisions of the pending night flying missions.

☐ Determine priorities for the night helicopters in support of ground personnel during the operational period. These priorities should be determined and communicated to ground personnel before aircraft report at-scene.
Priorities should consider the following:

1. Protecting evacuation egress.
2. Structure defense.
3. Establishing anchor points.
4. Perimeter Control
5. Detecting and suppressing spot fires.

☐ Identify Dip Sites

☐ Dip Site safety parameters for night operations:

Aircraft Type	Dip Site Obstacle Clearance
S-61/S-70/UH-60 or smaller	150 feet x 150 feet
CH-47/S-64	200 feet x 200 feet

☐ Communicate priorities and objectives to night flying helicopters.

☐ If the incident duration extends beyond Initial Attack, transition to the Night Extended Attack Checklist.

NIGHT FIRE SUPPRESSION – INITIAL ATTACK (GROUND SUPPORT)

Division/Group Supervision

Priorities and Objectives

☐ Receive a brief from the Incident Commander to determine the mission priorities and objectives for night helicopters to support ground personnel during the operational period. These priorities should be determined before the aircraft reports at-scene

☐ Priorities should consider the following:

1. Structure defense.
2. Establishing anchor points.
3. Perimeter control.
4. Detecting and suppressing spot fires.

Communication

☐ Brief all assigned personnel regarding night aerial suppression operations.

☐ Ensure proper Air-to-Ground frequencies are operable and utilized.

☐ Determine a ground point of contact to communicate with the assigned aircraft.

☐ Ensure ground crew member accountability in the vicinity of air operations.

Lighting Discipline

☐ All ground personnel shall use headlamps in the vicinity of air operations.

☐ Consider using **RED** chemical lights attached to ground personnel to increase the visibility of personnel on the fire line by flight crews.

☐ Use strobe lights (only at the request of flight crews) in conjunction with Air- to-Ground radio communications to identify water drop locations and/or identification of ground personnel.

WARNING

Do not point strobes or headlamps directly at the aircraft unless directed by the flight crew.

WARNING

The use of lasers by ground personnel is prohibited.

CAUTION

Blue or green lights emit a spectrum that cannot be seen through Night Vision Goggles (NVGs) on the fire line. (RED) is the preferred color.

Hazard Identification

☐ Aerial resources shall be notified of the following hazards:

1. Known dip site hazards, such as powerlines, cables over the site, and snags.
2. Authorized UAS operations or Unauthorized Incursions.
3. Aerial Hazards at or near the work area.

Target Description

☐ Have GPS coordinates (Degrees/Decimal/Minutes format) ready for the general locations requiring helicopter support.

☐ Identify prominent landmarks to aid aircraft in specific target descriptions:

1. Man-made landmarks, such as roads, developed areas, isolated structures, vehicles, etc.
2. Natural landmarks include peaks, outcroppings, rivers, streams, lakes, etc.
3. Landmarks such as lighted roads, freeways, and buildings are preferable.
4. Lighting such as a chem light buzz saw or a strobe (only at the request of flight crews) can assist in identifying a ground crew's location.

Drop Zone Precautions

☐ Establish fire line procedures to ensure line clearance before night helicopter operations.

☐ Ensure line clearance before the first drop and communicate the clearance on the assigned Air-to-Ground frequencies.

☐ Verify drop zone clearance.

WARNING

Ensure 100-foot minimum line clearance at water-dropping locations during night helicopter operations. Hazards may include rolling and falling material due to rotor wash and fire suppressant impact.

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APPENDIX C: ICS-802 NIGHT EXTENDED ATTACK CHECKLIST

NIGHT FIRE SUPPRESSION – EXTENDED ATTACK (COMMAND)

Incident Commander

Night Operations Criteria

☐ BEFORE requesting a night aerial suppression resource, determine if the need meets at least one of the following criteria:

1. Immediate threat to human lives.
2. Immediate threat to structures.
3. Immediate threat to high-value resources and/or critical infrastructure.
4. Response would inhibit significant fire growth.

Ordering Criteria

☐ Order night fire suppression aircraft one operational period before the expected need.

☐ Night HLCO shall be ordered to any incident where (3) or more crewed aircraft are conducting low-level operations (500 feet AGL and below) in a working area.

Working area is defined as a location where an identified project or task is being accomplished with one or more crewed aircraft.

Flight Time Limitations

☐ Pilots are limited to the AHJ or own-agency flight time limitations for planning purposes, whichever is most restrictive.

Operations Section Chief

Night Operations Planning & Support

☐ Review incident objectives to ensure they meet Night Operations Criteria.

☐ Determine the need for subordinate staff (AOBD, ASGS, HEBM, etc.).

☐ Obtain information on the night flying operation:

1. Number of aircraft and type.
2. Night HLCO shall be ordered to any incident where (3) or more crewed aircraft are conducting low-level operations (500 feet AGL and below) in a *working area* – as defined in the Incident Commander checklist.
3. Area of operation.
4. Mission objectives

☐ Incident Commander approves night flying operations for each operational period.

☐ Advise the Air Ops Branch Director (AOBD) of the intent to conduct night flying operations and the night flying objectives.

☐ Inform all Branches and Divisions of the pending night flying missions.

☐ Ensure the AOBD conducts a night Air Operations Brief before night operations, including priorities and objectives.

Air Operations Branch Director

Night Operations Planning & Support

☐ Inform ATGS of pending night flying operations to include, but not limited to:

1. Number of aircraft ordered.
2. Night HLCO identification and contact information, if applicable.
3. Night fire suppression flight crew contact information if HLCO is not assigned.
4. Inform ATGS if a day reconnaissance is requested by the night helicopter flight crew.

☐ Dip Site safety parameters for night operations:

Aircraft Type	Dip Site Obstacle Clearance
S-61/S-70/UH-60 or smaller	150 feet x 150 feet
CH-47/S-64	200 feet x 200 feet

☐ Prepare and staff Helibase for night operations.

☐ Consider placing night fire suppression aircraft away from day aircraft at the Helibase to mitigate Foreign Object Debris (FOD) and aircraft maintenance interruptions.

☐ Identify each aircraft's recovery location if other than the helibase.

☐ Establish the start and stop times for each night aircraft. Do not purposely plan flights during the last two hours of the flight crew's 14-hour duty cycle. Take into consideration flight time to recovery locations if other than the helibase.

☐ Identify the area of operations/working area within the FTA for each night aircraft.

☐ Conduct Air Operations Brief for night operations, ensure flight crews receive priorities and objectives.

☐ Determine if a ground-filling water point is required if dip sites are scarce.

☐ If ground-filling points are required – ensure appropriate staffing is in place.

Night Operations Risk Assessment

☐ Ensure flight risk assessments are submitted via the AHJ flight risk assessment tool.

☐ Ensure AHJ policies are followed for risk assessments considered moderate or high **PRIOR** to proceeding. The Helibase shall document and log each risk assessment.

☐ If able, at least one (1) hour before cutoff – assign one (1) night fire suppression helicopter to work with day operations and continue to remain at-scene into the night operation. Note 1

Note 1: *This reduces day FTA saturation and twilight flight conditions. This lead helicopter will operationally validate obstacles, hazards, and night dip sites and establish the daisy chain when other night resources arrive.*

☐ A new risk assessment is required if night aerial resources are diverted to a location where the operating environment or risk elements significantly change. The new risk assessment level may be communicated via radio and documented.

☐ If **any** ordered aircraft is Out-Of-Service (OOS) due to maintenance, the Helibase shall follow the AHJ policies and procedures to return to service.

NIGHT FIRE SUPPRESSION – EXTENDED ATTACK (GROUND SUPPORT)

Division/Group Supervision

Priorities and Objectives

☐ Receive a brief from the Operations Section Chief to determine the mission priorities and objectives for night helicopters to support ground personnel during the operational period. These priorities should be determined before the aircraft reports at-scene.

☐ Priorities should consider the following:

1. Structure defense.
2. Establishing anchor points.
3. Perimeter control.
4. Detecting and suppressing spot fires.

Communication

☐ Brief all assigned personnel regarding night aerial suppression operations.

☐ Ensure proper Air-to-Ground frequencies are operable and utilized.

☐ Determine a ground point of contact to communicate with the assigned aircraft.

☐ Ensure ground crew member accountability in the area where air operations are being conducted.

Lighting Discipline

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Drop Zone Precautions

☐ Establish fire line procedures to ensure line clearance before night helicopter operations.

☐ Ensure line clearance on the assigned Air-to-Ground frequencies.

☐ Verify drop zone clearance.

WARNING

Ensure 100-foot minimum line clearance at water-dropping locations during night helicopter operations. Hazards may include rolling and falling material due to rotor wash and fire suppressant impact.