Night Aerial Firefighting Operations
Objectives:
Discuss history of NVG flight operations
Training requirements for air crew members
NVG goggle maintenance
Night aerial firefighting policy
2015 Ventura County in review.
Ventura County Aviation unit has had a NVG program since 1995. The unit has performed night time aerial firefighting since 2005. Firescope published a policy in California in 2007.
LOS ANGELES — Los Angeles County leaders responding to the summer's destructive Station Fire voted Tuesday to urge the U.S. Forest Service to allow helicopters to battle wildfires at night.

The review concluded that experienced county helicopter pilots could have made water drops on the first night of the fire — although it conceded that it was not known if that would have made a difference.
General NVG Training
Requirements minimums

• All personnel participate in classroom instruction
• Pilots: Initially each PIC shall have min 20 hours NVG and 10 of it be wilderness/remote.
• Qualified Crew Chiefs: Log a minimum 15 hours NVG flight time 10 hours wilderness/remote.
• Areas of training: hoist rescue, hover load and off loads, confined area landings, firefighting
NVG Training Requirements

Recurrent

• PIC : perform 1 each: Hoist evolution, hover load, confined area landing every 6 months.

• Crew chiefs: 1 Hoist evolution, Rescue crewman, hover load, every 6 months
“The introduction of Night Vision Goggles has been the single most important advance in night flying Operations for the Rescue Helicopter Service and has significantly enhanced the overall safety for the flight crew, allowing a better Air Ambulance and Search and Rescue capability...”
Night Vision Goggles: How they work???

NVG works by intensifying the available ambient light (moonlight, starlight, street lights etc) up to 3500 times - creating an image which appears green when viewed through the goggles. This enhances the pilot's visual acuity at night to 20/25 vision as opposed to unaided vision at night of 20/200. The difference of flying at night with or without goggles is like comparing driving along the road at night with your parking lights on rather than with your headlights on full.
Cigarette lighter illuminating person and surroundings. Visible from several kilometers away.
Mountainous terrain with person illuminating a cellphone (white dot center). Light pictured from distance of 4 miles.
Power transmission lines in rural area as seen through Night Vision Goggles
Wires as viewed through Night Vision Goggles - only visible in ideal lighting conditions
Township as seen through Night Vision Goggles
Goggle Maintenance

• Units to be serviced by technician every 180 days.
• Log of use kept by each individual user.
• Batteries changed every 10 hours use or 90 days in service.
Referenced Documents:

- **FIRESCOPE Night Flying Guidelines:** A guide developed by FIRESCOPE agencies to provide procedures for night operations on fires.

- **Interagency Helicopter Operations Guide (IHOG):** The operational guide adopted by the Fire District for helicopter operations.
The decision to fly helicopters at night for water drops should only be considered after a thorough risk / benefit analysis. Nighttime helicopter operations may be appropriate in situations where the following conditions exist:

- Lives are or will be threatened
- Structures are or will be threatened
- Resources or infrastructure of significant value are or will be threatened
• Excessively high suppression costs can be prevented

• Fire behavior is within the threshold of control of the assigned helicopters

• Probability of mission success is HIGH

• The mission objectives and outcome must justify the risk of night flying
The assigned pilots(s) must approve of the operation:

- Confirm operation is in compliance with FIRESCOPE Night Flying Operations

- Pilots should NEVER be pressured into night operations!
A pre-designated helispot approved for night operations is available:

• An engine shall support the helispot

• The helispot shall have dust abatement and adequate lighting
Pilots shall be familiar with the terrain in the area of operation:

- Operations conducted on the incident during the day meet this requirement

- Consideration must be given to pilot flight time, duty day, and the impact on the following day’s operations
Incident:
The decision to fly helicopters at night for water drops should only be considered after a thorough risk/benefit analysis. Nighttime helicopter operations may be appropriate in situations where the following conditions exist:

Pilots have given approval for the night flying mission and are familiar with the FIRESCOPE Night Flying Guidelines.

Lives are or will be threatened

Structures are or will be threatened.

Resources or infrastructures of significant value are or will be threatened

Excessively high suppression costs can be prevented.

Do the mission objectives, outcome and the probability of mission success justify the risk of night flying.

Pilots have been made aware of the known hazards in the area of operation, or the hazards are assessed and mitigated during initial attack incidents.

Pilots should be familiar with the terrain in the area of operation.

Ground surface lights and/or ambient light in the drop area are adequate for the pilots to make the drops with or without the aid of night vision goggles

A night time approved helispot is assigned and staffed. The helispot will be dust-abated and have adequate lighting (ambient or artificial).

Additional Considerations

Objectives will be clearly given and understood by the Pilots, justified, and essential to accomplishing incident objectives as resources arrive at the scene.

With multiple aircraft, flight routes to and from the fire area, check-in points, potential drop areas, and helispot traffic patterns will be established by pilots on scene.

Reminder: incidents involving more than 2 helicopters should utilize night aerial supervision.

Incident Commanders are to continually assess the need to continue night water drops.
2015 NVG Incidents in Review
137 Brush Fire Responses
31 after hours night fire responses
Burson Incident 2340 hrs
CA VNC 15-0059075
@ 20 acres in LPF DPA
No threat to life / property,
RECON of fire
Potrero Incident 11-7-15 0245 hrs
50 acres in light to medium Brush
Wind driven low humidity, threat to structures
20 drops from H 35 A
Coordinated with LACOFD copter 16, AA 310
Charo Incident CA LPF
Acres
Banister Fire 11-11-15 1800 hrs
CA VNC 15-0077051
27 acres north east wind
Structures threatened
18 drops
Multiple aircraft including LACOFD HELCO
Solimar Fire 12-25-15 2340 hrs
Christmas night CA VNC 15-0089187
1200 acres wind driven fire
Structures threatened multiple NVG
aircraft 95 drops from H 23A
Piru Fire 11-16-15 1900 hrs
North Wind driven Fire in oil field
Remote Difficult access, 5 acres
Aircraft held in check till ground resources able to make access
Thanks for listening