

Introduction





Personnel Assigned to Air Operations



- Air Operations Chief
- Director of maintenance
- 3 Shift Captains
- 3 Senior Pilots
- 9 Pilots
- 18 Firefighter Paramedics
- 3 Lead mechanics
- 9 Mechanics
- Qualified relief
- Additional support staff

Aircraft Assigned to Air Operations



- 5 B-412's (360 gal tank MGW 11,900)
- 3 S-70 Fire hawks (1,000 gal tank MGW 23,500)
- Multi-mission configuration
- Hoist capable
- IAW L.A. County DHS defined as Air Ambulance
- 3 person Crew (2 FFPM, 1 Pilot)
- 3 Air Squads daily
- Augmented staffing during fire season





Flight Operations conducted 24/7



Los Angeles County Demographics:

- Population 10,393,185
- Most of Population Lives on the Coastal Plain Between the Pacific Ocean and the San Gabriel Mountains
- 4081 Square Miles
- 75 Miles of Coastline plus Catalina & San Clemente Islands
- 50% of County is Mountainous Terrain
Highest Point – Mount Baldy at 10,064 feet
- Northern Third of County is Part of the Mojave Desert
- Total Hours Flown: 2,700-3,000 annually
- NVG Hours flown:
- Hoist Rescues: average 80-100 annually
- Trauma calls:
- Vegetation Fires: 1335

Surrounding Agencies with Night Vision Goggle Programs



- LA City Fire
- Ventura County Sheriff/Fire
- Santa Barbara County Sheriff/Fire
- Kern County Fire
- Orange County Fire
- San Diego City Fire
- USFS H-531 ANF

Air Operations NVG History



1976- Generation I Night Vision Goggles utilized through a joint program with the USFS

1977- Mid-Air collision with a USFS contract helicopter at night on the Middle Fire, LAC stopped the NVG program test

2001- Restarted our NVG program using the latest Generation III NVG's for night time aerial firefighting and all risk operations



Air Operations NVG History



2005 Tovey Fire
2006 Topanga Fire
2007 Canyon Fire
Corral Fire
2008 Merek Fire
Sesnon Fire
Sepulveda Fire
Tea Fire
Sayre Fire
2009 Jesusita Fire
Palos Verdes Fire
Station Fire
2012 Crown Fire
2013 Powerhouse Fire
Silver Fire



Advantages of NVG's



- Dramatic improvement in flight crew safety
- Ability to see terrain and hazards
- Ability to see through light obscuration
- Ability to see other aircraft in limited visibility
- Tactical advantage on wildfires since burning indexes are generally lower at night

NVG Disadvantages



- Cost of startup (Cockpit Lights, Goggles and Training)
- Cost of maintaining pilot currency if not used frequently in routine operations
- Field of view is 40 degrees
- Limited depth perception
- Visual illusions associated with the night flight and the use of NVG's
- The dynamic range of handling bright lights in a dark background is limited. High end military grade NVG have superior dynamic range

NVG Disadvantages Cont.



- Low time pilots may exceed their skill level attempting to combine flying on fires in the mountains at night
- Loss of situational awareness or spatial disorientation
- Potential CFIT
- **Significant overall increased risk to aviation operations**

NIGHT FLYING RISK ASSESMENT

(Per Firescope Night Flying Guidelines)



Lives are or will be threatened.	
Structures are or will be threatened.	ONE OF THESE
Resources of significant economic value are, or will be threatened.	FOUR ITEMS ARE REQUIRED
Excessively high suppression cost will be prevented.	
Agency has sufficient personnel to staff a night operation.	MISSION REQUIRED
Probability of mission success is high.	MISSION REQUIRED
The above conditions will occur often enough that pilot and crewmember proficiency will be maintained.	REQUIRED FOR NIGHT PROGRAM DEVELOPMENT
The above conditions will occur at a frequency that the cost of a night flying operation can be justified.	REQUIRED FOR NIGHT PROGRAM DEVELOPMENT

Night Flying Guidelines located at
www.firescope.org

NVG Program Administration



- **Risk Management**
- **Training**
 - Initial, Annual, Continuation, Currency
 - Agency policy and procedures
 - Qualified instructors
- **Aircraft and equipment maintenance**
 - Aircraft lighting/ STC, Milspec, conformity tests
 - NVG

NVG Program Administration Cont.



- Three Department Pilots are Qualified NVG Instructors
- Aircrew Qualifications
 - Crew Resource Management
 - Department Policy and Procedures

NVG Operational Considerations



- Night Flying Guidelines/Risk management

Water dropping criteria

- Aerial Supervision

NVG Operational Considerations



- Hazard reconnaissance
- Visibility
- Moon illumination
- Turbulence
- Flame length/intensity
- Smoke
- Wind
- Number of aircraft
- Communications
- Helispots for ground fill
- Air routes
- **Airspace control**
- **Continuous risk re-assessment**



The End
Thank You

