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**ORANGE COUNTY SHERIFF'S  
DEPARTMENT**

**AIR SUPPORT BUREAU**

**NIGHT VISION GOGGLE MANUAL**

## **COCKPIT FAMILIARIZATION**

1. Conduct NVG ground familiarization of aircraft cockpit in a night environment.
2. Assemble NVG equipment.
3. Use aircraft internal and external lighting system.
4. While wearing NVG's ensure pilot can visualize clearly all instruments and controls.
5. Ensure pilot has adequate situational awareness of all controls and displays in the aircraft with NVG's on.

## **GENERAL OPERATIONS**

### **1. General Information**

- a. The NVG's are utilized by Sheriff's aircrew personnel to enhance flight safety, increase mission capability and crew comfort levels during night VFR flights.
- b. Qualified pilots are encouraged to use NVGs while acting as pilot-in-command of OCSD helicopters if they are operating in mountainous terrain. The use of NVGs is the pilot's decision.

### **2. NVG Operational Requirements**

- a. Currency requirements for pilots using NVGs.
  - Pilots will maintain currency per FAR 61.57(f)
- b. Annual Proficiency Check
  - Pilots will receive an annual NVG Bureau Standardization Flight with an authorized NVG CFI (See "Task and Performance Standards Objectives"). The NVG Standardization Flight will be documented on a Pilot Evaluation Form. Pilots will receive annual NVG ground school refresher training.
- c. Pilot initial new aircraft transition training.

- Authorized NVG pilots transitioning to a new aircraft model will have a minimum of three hours dual transition training with an authorized NVG CFI using Bureau standardization (NVG Operations Tasks and Objective Performance Standards).
- d. Tactical Flight Officer (TFO) Requirements (TFOs are responsible for maintaining currency)
- Complete annual NVG ground school refresher training and complete annual NVG recurrent flight training with an authorized NVG PIC.

### **3. Instruction**

- a. The use of NVGs is not authorized by any pilot or TFO until proper instruction is received by a qualified NVG instructor.
- b. The instruction will cover requirements per FAR 61.31(k), 61.57(f) and 91.205(h).
- c. While the pilot is in **Initial Pilot Training**, they will receive a minimum of five hours initial NVG flight training prior to conducting any **non-training** NVG operations.
- d. A training sign-off evaluation form documenting this training shall be completed by the instructor and signed by the student. The form shall indicate whether the training was for a Pilot or TFO. Pilots will also have their log book endorsed per FAR 61.31(k).

### **4. Pilot In-Command Qualification for NVG Operations**

- a. Pilots will complete an NVG ground course and flight training provided by either an approved vendor or an experienced Air Support FAA authorized NVG Flight Instructor.
- b. The initial flight training for NVGs will be a minimum of five (5) hours for pilots and will include the following:
  - NVG Normal Operations
  - NVG Emergency Operations
  - Sheriff's Specific Operations
  - FAA Requirements

- c. After completing **Initial Pilot Training** and prior to acting as PIC on any OCSD helicopter NVG operation, the pilot will receive a standardized check ride by the Chief Pilot or his designee. The pilot will need to demonstrate proficiency in NVG operations as outlined in the “Tasks and Performance Standards” and in accordance with FAR 61.31(k).
- d. The pilot will receive an “NVG Pilot In Command” sign-off evaluation from the Chief Pilot or his designee and the evaluation will be placed in the pilot’s training folder.

## **5. Operational Checks**

- a. Operational and pre-flight checks and maintenance shall be completed prior to using NVGs in an OCSD aircraft.
- b. Any discrepancy with the NVG device will be documented and the NVGs taken out of service until repaired.
- c. NVGs shall not be used if the minimum required visual acuity is not attained during the pre-flight operational checks.

## **6. General Usage in Flight**

- a. NVGs that are helmet mounted are to be used in flight with approved mounts only.
- b. Proper compatible cockpit lighting shall be utilized when NVGs are being operated by the pilot or TFO.
- c. NVGs shall be used in accordance with ASB Policy and Procedures.
- d. Pilots operating with NVGs shall not perform a mission beyond their own capability.
- e. A PIC shall not use NVGs if their NVG currency has lapsed.
- f. Flight below 300 feet above ground level will usually be flown at sixty five (65) knots or at a speed that allows the pilot to safely avoid any obstacles. Flights below 100 feet above the ground will usually be flown a forty (40) knots or less or at a speed that allows the pilot to safely avoid any obstacles.

## **7. Crew Coordination**

- a. A verbal notification that NVGs are going on or off should be used by the pilots and TFOs during flight.

- b. Pilots and TFOs should make each other aware of towers, antennas and obstacles while operating NVGs. Communication is essential.

## **8. Logging of NVG Flight Time**

- a. Pilots will log NVG currency requirements per FAR 61.57(f)

## **9. Flight Operations**

- a. Only approved flight crewmembers may conduct NVG Operations.
- b. Prior to all aided operations, the NVGs shall be inspected for proper condition.
- c. When conducting NVG aided operations, all required flight crewmembers should have the ability to be on NVGs. Pilots may elect to fly unaided if in their opinion the flight will be safer.
- d. Helicopter night NVG Operations include the following:
  - Patrol
  - Surveillance
  - Transportation
  - Off-site landings
  - Flat terrain
  - Mountainous terrain
  - Search and Rescue
  - Special Operations
    - Over water
    - Fire recon
    - SWAT

## **10. Weather Minimums**

- a. NVG operations may be conducted under weather conditions which permit a minimum of two (2) statute miles visibility and five hundred (500) foot ceiling within one thousand (1000) feet of the intended flight path.
- b. Ceiling conditions (fog, haze, or pollutants) must be constantly evaluated for their effect on NVG performance.

## **11. Aircraft Modifications Required for NVG Flight**

- a. Aircraft will be equipped and maintained per FAR 91.205(h).

- b. Cockpit lighting compatible for NVG operations. Compatible lighting means approved NVG filters installed on required flight instruments, console, overhead radio, caution panel, and cabin lighting. When necessary, NVG compatible floodlights, or approved hand held lighting may be used to enhance cockpit lighting.

## **12. Authorized Aircraft External Lighting Available with NVG's**

- a. Landing light
- b. Position lights
- c. Night Sun
- d. Retractable swiveling landing light
- 3. Other lighting that is available and suitable

## **13. Additional Lighting Sources Authorized**

- a. Ground personnel with established communications with either pilot or TFO.

## **14. Reporting of NVG Irregularities and Discrepancies**

- a. Each NVG set must have a current maintenance tracking form readily available for review by any crewmember. Flight crewmembers are responsible to ensure their NVGs have been properly maintained and are in serviceable condition.

## **15. Inadvertent IMC Procedures**

- a. Pilot reverts to instrument flight.

## **16. Post Flight**

- a. NVG maintenance and inspections by authorized repair station every six (6) months.
- b. Report and document any NVG irregularity or discrepancies. Take NVGs out of service until repaired by an authorized repair station.

## **17. Flight Time Using NVGs**

- a. Maximum flight time using NVGs will be five (5) hours in a workday. A "workday" shall commence at the start of the employee's work shift and end 24 hours later.