Maintaining Night Vision Imaging System Compatibility

Night Vision Imaging Systems (NVISs) are used on many helicopters and fixed-wing aircraft. Maintenance crews should be properly trained and follow programs accepted by the Federal Aviation Administration (FAA) for both the aircraft NVIS and night vision goggles (NVGs).

Note: This reference document is for information only. To perform maintenance and/or system inspections, always consult and follow current manufacturers' procedures and/or FAA-approved data.

Night Vision Imaging System

An NVIS includes interior and exterior lighting, cockpit windows, radar altimeters, and crew station design/components, such as filtration, transparencies, head-mounted NVGs, and ancillary equipment. Some NVIS supplemental type certificates (STCs) have specific NVGs documented for use that are identified by a part number. Aircraft modified for NVG operations must be configured as described in the NVIS STC and in any engineering change orders or other supplemental data related to the NVIS modification.

NVGs are part of the overall NVIS. They are appliances, although they are not physically connected to the aircraft. NVGs compatible with the installed NVIS lighting system are identified in the flight manual supplement (FMS), but NVIS instructions for continued airworthiness (ICAs) do not include NVG maintenance documents; the NVG manufacturer or an FAA-certificated repair facility with approved repair specifications provides the documents.

Verify NVIS and Aircraft Compatibility

Maintaining system compatibility requires absolute confidence that all documents are accurate and current, that the documents are correct for the aircraft, and that you understand the documents.

Critically important is the assurance that all modifications accomplished after the installation of the NVIS STC do not affect NVIS compatibility. Verify that a compatibility evaluation was performed.

Before working on NVIS systems or NVIS-configured aircraft, be familiar with and understand the documents listed 1–9 if they apply to the operation or aircraft. Ask if the aircraft owner/operator is aware of Safety Alert for Operators (SAFO) Letter 10022 dated 12/15/2010, "Maintenance of NVIS." The letter is posted at http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo.

Note: Depending on the Code of Federal Regulations under which the aircraft is being operated, the aircraft owner/operator will possess all or some of the following documents:

1. STC limitations and conditions.
2. NVIS-related FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance).
3. Applicable maintenance manuals, ICAs, and operator's inspection programs. NVIS alteration documentation.
4. Other alteration documentation that could affect NVIS compatibility.
5. Original equipment manufacturer (OEM)-manufactured NVIS documentation.
6. Flight manual (FM), FMS.
7. OEM and STC holder service bulletins (SBs).
8. Operation Specification (OpSpec) A050, Helicopter Night Vision Goggle Operations (HNVGO).
9. OpSpec D093, HNVGO Maintenance Program.
10. OpSpec/Management Specification (MSpec) D095, Minimum Equipment List authorization.

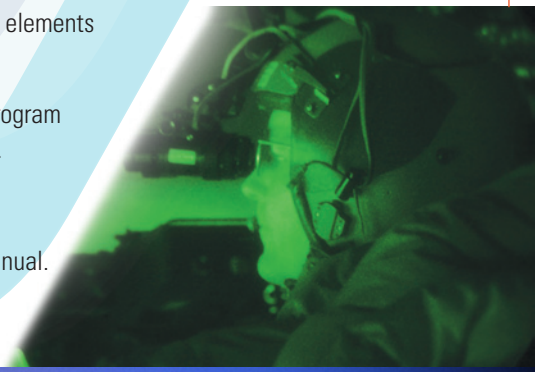
Assure NVIS and Aircraft Records Are Correct

1. Verify that the documents are the correct documents for the aircraft.
2. Have access to STC-related documentation and any engineering change orders or other supplemental data related to the NVIS alteration.
3. Review NVIS ICAs. Ensure the ICAs include the most current appendix changes, if applicable.
4. Review current FM and/or FMS for NVIS checks, inspections, and operation.
5. Review the Master Drawing List to confirm applicability of the aircraft being inspected.
6. Review the operator's aircraft maintenance or inspection program for NVIS ICAs and NVG maintenance documents or procedures.
7. Verify that any subsequent aircraft modifications to the cockpit, cabin, or aircraft exterior involving a light-emitting or light-reflecting device were properly evaluated in accordance with the Limitations and Conditions section of the STC.
8. Review any alterations incorporated on the aircraft, both major and minor, that may have an adverse effect on NVIS compatibility.
9. Review applicable SBs.

Maintenance and Preventive Maintenance Documents

Maintenance and preventive maintenance documents for NVIS-installed lighting should contain, at minimum, one of the following documents or procedures adequate for NVIS maintenance:

1. FAA-accepted ICAs that the TC or STC holder provides as part of its design approval.
2. FAA-approved maintenance/inspection program containing NVIS procedures.
3. FAA-approved NVIS repair specifications.
4. FAA-approved operator-developed NVIS maintenance procedures.
5. FAA-accepted maintenance/preventive maintenance procedures that contain, at minimum, the elements specified in RTCA/DO-275, section 5.
6. FAA-approved maintenance/inspection program containing NVG maintenance procedures.
7. FAA-approved NVG repair specifications.
8. The NVG manufacturer's maintenance manual.



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