

**NVG SUPPLEMENT**

**To the**

**Skyline Aviation Limited Part 135 Check & Training Manual**

Revision Original

Effective 01 June 2010

**NIGHT VISION IMAGING SYSTEMS (NVIS)  
TRAINING and ASSESSMENTS**

Refer to AC 91-13, Night Vision Imaging Systems for full details concerning all NVIS Ground and Flight training.

All NVIS training is to be conducted by a designated NVIS Flight Instructor. Records of completed training (NVIS Ground Course Tests, Skyline Aviation Training Forms) shall be kept on the individuals file.

In accordance with Part 61, the successful completion of the flight training and qualification checks must be certified in the pilot's logbook as a night flight endorsement using NVIS by the instructor or examiner conducting the training and the check along with the aircraft make and model that the endorsement is valid for.

The following types of NVIS Training are authorised to be conducted under Skyline Aviation Ltd's Part 119 AOC:

1. **NVIS Ground Theory Course.** The 'NVIS Training Guide' handbook fully covers the syllabus as laid out in AC 91-13, Appendix II. On completion of the NVIS Ground Course, and successfully passing the NVIS Ground Training Course Test, a pilot/crew member will be awarded a certificate of completion.

Individuals completing initial NVIS training are to complete the ground course in full prior to undertaking any Flight Training. Individuals completing the (annual) recurrent training are only required to complete certain elements of the full NVIS Ground Training Course, as laid down in AC 91-13, Appendix VI.

2. **NVIS Flight Training Courses.** Individuals must meet the prerequisites for flight training as laid down in AC 91-13, para 4.3.1 (Pilots) and 4.5.1 (NVIS Crew Members) prior to completing the following flight training:
  - a. **Pilot Course.** Consists of a minimum of 5 hours flight time in accordance with (iaw) the syllabus laid out in AC 91-13, Appendix III. Annex A to this part lays out the full flight training syllabus to be completed. The syllabus is generic in nature, so the instructor should gear the training towards the specific class and type of a/c being used for the instruction. The amount of required flight training is wholly dependent on the individual; however, the minimum flight time is not to be less than 5 hours. Each pilot must complete a NVIS Initial Flight Check (as detailed in AC 91-13, Appendix III) which is to include, as a minimum, a demonstration of competency in:
    - 1) mission planning/flight planning for the flight;
    - 2) determining the serviceability of NVIS equipment, including the aircraft components;
    - 3) performing cockpit drills and 'Goggle/de-goggle' procedure";
    - 4) performing NVIS hover, hover-taxi, departure, transit, navigation and arrival procedures;
    - 5) performing NVIS practice malfunctions and emergency procedures;
    - 6) performing circuit operations to unlit areas;
    - 7) performing loss of visual reference procedures on landing and take-off;
    - 8) performing inadvertent IMC penetration procedures and safe recovery to VMC flight, including a single pilot unusual attitude recovery, maintaining controlled flight within the limits stated in 'pilot training prerequisites'; and
    - 9) perform a selection of practice aircraft emergency procedures, under NVIS conditions, applicable to the aircraft type.

**Note**, depending on the individual's level of competence, the NVIS Initial Flight Check can be completed as part of the 5 hour training course.

- b. **NVIS Crew Member Flight Training Course.** Is to be completed iaw AC 91-13, Appendix V. Non pilot crew members should complete all phases of NVIS training similar to that of pilots. Due to the importance of crew coordination, it is imperative that all flight crew members be familiar with all aspects of NVIS flight. Additionally, crew members may have task qualifications specific to their position/area of responsibility e.g. winch operator.

Subsequent to completing the Skyline Aviation Ltd 'NVIS Ground Training Course', a NVIS Crew Member must complete a minimum of two hours of NVIS flight training/checking that is to cover the following:

- 1) Preparation
    1. NVIS equipment checks
    2. NVG equipment pre-flight inspection and focusing procedures
    3. Pre-flight planning
    4. Aircraft pre-flight inspection
    5. Before take-off NVG check
  - 2) Emergency procedures during any airborne phase
    1. NVIS failure
    2. NVG failure
    3. Aircraft emergencies
    4. Lighting systems
    5. Communications systems
    6. Inadvertent IMC procedures
  - 3) Special procedures
    1. Any procedures specific to the operator's operation e.g. confined area operations, low level searches, winching operations, etc.
  - 4) Crew/Cockpit resource management
  - 5) Post flight procedures
    1. NVG recording time
    2. NVIS/NVG discrepancies and unserviceabilities
    3. Aircraft discrepancies and unserviceabilities, including NVIS lighting systems
3. **Annual (Recurrent) Training Course.** NVIS Recurrent Training is comprised of a ground training and flight training curriculum. Recurrent training is the annual training required for NVIS pilots and crew members who should continue to serve in the same duty position in a specific make and model aircraft during NVIS operations. This training is also required for NVIS pilots who have exceeded 120 days since their last NVG Operation.

Recurrent ground training requires the completion of the Skyline Aviation Ltd 'NVIS Ground Recurrent Training Course' (reference: Skyline Aviation Ltd 'NVIS Training Guide' handbook), and the NVIS Initial Flight Check, as in 2. a. above – **Pilot Course.**

4. **NVIS Proficiency Check.** The NVIS Proficiency Check is available to be completed by a person who does not meet the NVIS Recency requirements of AC91-13, para 4.3.4 (pilot) and para 4.5.4 (crew member). A NVIS proficiency check should involve a NVG flight operation that is representative of a typical NVG flight operation conducted by the operator, including as a minimum:

- 1) approach and departure from unimproved landing area;
- 2) procedures for utilising backup power to the NVGs;
- 3) NVG unit failure for each of the flight crew members;
- 4) standard emergency exercises from the NVIS Flight Training Syllabus;

- 5) procedures for loss of visual reference (brownout/whiteout, etc) when visibility is inadvertently lost on departure or arrival to or over a landing area;
- 6) procedures for coping with deteriorating in-flight visibility and/or picture quality;
- 7) inadvertent IMC penetration, unusual attitude recovery and instrument recovery to VMC flight, maintaining controlled flight within the limits stated in 'pilot training prerequisites' (AC 91-13, para 4.3.1):
- 8) completing unaided approaches to an unlit area. This is to ensure the unaided night flying skills that underpin effective single pilot aided flight are being maintained to a satisfactory standard.

**Annex A** to  
**NVG SUPPLEMENT to CHECK & TRAINING MANUAL**  
**NIGHT VISION IMAGING SYSTEMS (NVIS)**  
**TRAINING and ASSESSMENTS**

**NVIS HELICOPTER FLIGHT TRAINING SYLLABUS**

**FLIGHT COURSE - 5 HOURS**

**COURSE OBJECTIVES:**

The student shall obtain the flight experience necessary to safely utilise NVIS during Night VFR flight operations in the New Zealand EMS environment.

**COURSE COMPLETION STANDARDS:**

This course is complete when the student has demonstrated through completing the Skyline Aviation Ltd NVIS Ground Training Course Test and the NVIS Initial Flight Check flight tests that the necessary aeronautical skills and experience have been obtained to safely operate EMS helicopters at night while using NVGs.

**FLIGHT TRAINING**

This syllabus is divided into one ground and four flight lessons (inclusive of final evaluation flight, student performance permitting). Each lesson builds on previous learning and, therefore should be completed in sequence as presented in the flight training syllabus.

However, to provide a degree of flexibility for adapting to individual student needs and the training environment, the syllabus lessons may be altered. Any deviation should not disturb the course continuity or objective. The final evaluation flight must be successfully completed before a completion certificate will be issued.

**LESSON ONE (Ground)**

**I. OBJECTIVES:** This lesson introduces and familiarises the student with general handling of NVIS equipment and aircraft pre-flight preparation (Cockpit Training). The student will be introduced to the necessary elements for NVIS flight planning.

**II. CONTENT:**

A. Lesson

1. Pre-flight inspection of NVIS equipment
2. NVG focusing procedures
3. Aircraft pre-flight and lighting setup
4. Before take-off NVG check
5. NVIS Flight Planning
  - a. Light Level Planning
  - b. Weather and NOTAMs
  - c. Obstacles and known hazards
  - d. Operational Risk assessment
  - e. CRM Concerns
  - f. Crew pre-flight briefings
  - g. Crew Duties
  - h. NVIS emergency procedures
  - i. Goggling and de-goggling
  - j. Aircraft equipment and switch layout
  - k. Aircraft Emergency procedures

**III. ASSESSMENT STANDARDS:** The student shall understand the operational considerations of NVIS and aircraft equipment pre-flight preparation and proper planning procedures for NVIS aided flight, including:

- Exhibiting knowledge of the elements related to a NVG pre-flight inspection (systematically in accordance with a prescribed checklist) including which items must be inspected, for what reason and how to detect possible defects.
- Verifies that the NVGs are in a condition for safe flight, notes any discrepancy (use of NVG maintenance and inspection log), and determines if the NVGs are airworthy.
- The student shall be able to focus the NVGs to obtain the best possible image.
- Determining if installed NVG instrument lighting, filters and supplemental lighting is operational and serviceable.
- Determining if the aircraft standard lighting is operational and will not adversely affect NVIS operations.
- Exhibit s knowledge of all elements related to efficient cockpit management procedures and related safety factors.
- Briefs all occupants not wearing NVGs on the differences of visual acuity between crew and passengers, ensuring that they not to use incompatible NVG lighting during flight unless cleared to by the crew.

**LESSON TWO (1.2 HOURS DUAL NVIS NIGHT)**

**I. OBJECTIVES:** This lesson introduces and familiarises the student with general handling and transition from unaided to aided helicopter NVG operations.

**II. CONTENT:**

A. Review Lesson One

B. Flight Lesson (Introduce)

1. Night flight planning
2. Preflight inspection
3. Hovering
4. Normal takeoff from a hover
5. Normal approach to a hover
6. Use of landing lights
7. Level turns, climbs and descents
8. Airfield operations
9. Off Airfield Takeoff & Landings
10. NVIS related ambient and cultural lighting effects.

**III. ASSESSMENT STANDARDS:** The student shall understand the operational considerations of helicopter NVG aided flight and become familiar with basic helicopter NVG operations and procedures.

- Prior to take-off, the student will ensure the NVGs are in the correct position for NVIS flight, ensuring all cockpit instrumentation is correctly lit and able to be read underneath the NVG picture.
- Vertical Take-off & landing, Hovering, hover-taxi
  - On take-off, ascends vertically to establish a hover altitude 4-6 feet,  $\pm 1$  foot, maintaining heading  $\pm 10^\circ$ , Drift not to exceed 1 foot.
  - Properly scans to maintain aircraft altitude and heading, does not allow the aircraft to drift on take-off or landing.
  - On landing, descends in a smooth controlled manner with no lateral or rearward drift at touchdown, maintaining heading  $\pm 10^\circ$ .
  - Hover-taxi (forward, rearward, sideward) at 6-8 feet,  $\pm 1$  foot, Maintains heading  $\pm 10^\circ$ , constant hover speed and maintains ground track within 2 feet.
  - Properly scans to maintain aircraft altitude and heading, does not allow the aircraft to drift on take-off, landing or hover-taxi.
  - Hovering turns, maintains altitude  $\pm 1$  foot, drift not to exceed 2 feet from pivot point, and maintains a constant rate of turn.
- Normal take-off from the hover
  - Clear area for obstacles and maintain obstacle clearance.
  - Correct use of landing light during transition.
  - Student must scan ahead to pick up the next cues to determine altitude and drift.
  - Maintains proper ground track with crosswind correction, if required.
  - On climbout, maintains recommended climb airspeed  $\pm 5$  kts, while maintaining heading  $\pm 10^\circ$ .
  - Aircraft instruments to be monitored to confirm IAS, ROC increase and power limits not exceeded.
- Normal approach and landing
  - Selects suitable termination point, establishing & maintaining the recommended approach angle (to ensure obstacle clearance), and rate of closure.
  - Maintains correct ground track with crosswind correction, if required, maintaining heading  $\pm 5^\circ$ .

- Avoids situations that may result in vortex ring state (low airspeed with ROD in excess of 300fpm). Cross checking the aircraft rate of descent and radar altimeter is important on all NVG approaches.
- Makes timely decision to overshoot if outside of normal parameters. Maintains correct ground track, transitions to a normal climb speed,  $\pm 5$  kts.
- Maintaining situational awareness through scanning and not fixating. Remain focused outside the aircraft except when necessary to scan aircraft instrumentation.
- Correct use of landing light during finals and as terminates to the hover.
- Circuit operations
  - Maintains situational awareness, obstacle clearance traffic avoidance and any applicable noise abatement procedures.
  - Maintains correct ground track with crosswind correction, if required.
  - Maintains correct circuit altitude  $\pm 100$  feet, appropriate airspeed  $\pm 10$  kts.
  - Aircraft performance confirmed by correct scanning of aircraft instrumentation.
- CRM
  - Student shall communicate effectively with all crew, respond to crew calls & commands and ensure the overall safety of the flight.
- Post Flight procedures
  - Student is to ensure that the NVIS Lighting system and NVGs are correctly post-flighted, with any discrepancies documented.
  - NVGs are to be correctly returned to storage cases.
  - NVG flight time to be correctly logged in the NVG maintenance and inspection log.

**LESSON THREE (1.2 HOURS DUAL NVIS NIGHT)**

**I. OBJECTIVES:** During this lesson, the student shall review assigned night vision goggle operations to gain proficiency and will be introduced to slope, confined area, pinnacle operations, running landings and emergency procedures.

**II. CONTENT:**

- A. Preflight Briefing
- B. Flight Lesson (Review)
  - 1. Hovering
  - 2. Normal takeoff from a hover
  - 3. Normal approach to a hover
  - 4. Use of landing lights
  - 5. Level turns, climbs and descents
  - 6. Airfield operations
  - 7. Off Airfield Takeoff & Landings
- C. Flight Lesson (Introduce)
  - 1. Shallow Approach/Running Landings
  - 2. Slope landings and takeoffs
  - 3. Low speed maneuvers – quickstops
  - 4. Maximum performance takeoff and climb (NVG Takeoff)
  - 5. Steep approach
  - 6. Confined area landings and takeoffs
  - 7. Pinnacle Operations
  - 8. Goggle failure
  - 9. Unusual Attitude Recovery
  - 10. Simulated engine failure
  - 11. Hovering Autorotations

**ASSESSMENT STANDARDS:**

- Shallow Approach/Running Landings:
  - Approach only to be used in an emergency situation where engine power is to be kept to a minimum (or OEI operations), or for hydraulics malfunctions (AS350 series).
  - Should only be carried out to a hard, smooth, well lit surface.
  - Establishes and maintains an appropriate approach angle, rate of closure and maintains a proper ground track, with crosswind correction if required.
  - Maintains a speed that will take advantage of effective translational lift during surface contact with skids parallel with the ground track.
  - Correct use of landing light throughout approach and landing.
  - Utilises correct flight control technique after ground contact.
- Slope operations:
  - Correctly scans to maintain aircraft attitude and heading, with no aircraft drift prior to ground contact, or no rapid descent.
  - Ensures main and tail rotor clearances throughout.
  - Maintain aircraft heading  $\pm 5^\circ$ , and reduces the down-slope skid under control until contact is established.
  - Demonstrates knowledge of aircraft limitations for slope landings:
    - BK117: Left slope –  $11^\circ$ , Right, rearward, uphill slope –  $8^\circ$ .
    - AS350: Uphill –  $10^\circ$ , Downhill –  $6^\circ$ , Lateral –  $8^\circ$ .
  - Exits the slope appropriately without drift.

- Quickstops:
  - Deceleration must be initiated by 'raising the cabin', to ensure tail rotor clearances throughout.
  - Student to maintain situational awareness (wind), heading  $\pm 10^\circ$ , assigned airspeed  $\pm 10$ kts, or selected hover location  $\pm 20$ feet and terminates in a level stationary hover before descending to HIGE.
  - Correct use of landing light throughout.
- Maximum performance takeoff and climb
  - Utilised when landing area is small or surrounding obstacles are unclear. Student must scan to overcome the immediate loss of peripheral information due to the vertical departure.
  - Maintain ground position (no drift) until forward transition initiated.
  - Uses the maximum available take-off power.
  - Maintains correct departure ground track, with crosswind correction if required.
- Steep approach
  - Considers the wind direction/strength, landing surface and obstacles.
  - Selects a suitable termination point, arriving at a stabilised hover  $\pm 2$  feet.
  - Establishes and maintains the recommended approach angle to ensure obstacle clearance – maximum  $15^\circ$ , and controls rate of closure.
  - Avoids situations that may lead to Vortex Ring State. Due to lack of peripheral cues and stereopsis, the only way to determine the ROD is through aircraft instrumentation. ROD to be 300rpm or less.
  - Approach to be slow and controlled, exhibiting a robust scanning technique. Excessive ROD, without scanning aircraft instrumentation, will not be detected until very late in the approach, which can result in a hard landing or over-torque situation.
- Confined area landings and takeoffs
  - The student shall understand how planning affects confined area procedures and the importance of determining the correct approach path, termination and departure path (ensuring obstacle clearance).
  - Maintains selected altitude  $\pm 100$  feet, airspeed  $\pm 10$ kts throughout the reconnaissance.
  - Tracks the selected approach path at an acceptable approach angle and rate of closure to the termination point – terminates all approaches to a hover.
  - The student will perform correct power margin checks prior to commencing the approach.
  - Avoids situations that may lead to vortex ring state.
  - The student will scan outside the aircraft for obstacle clearance during all phases of flight, and all aircraft instrumentation as required.
  - Utilises Helicopter Crew effectively for scanning obstacles and aircraft clearances during all confined area operations, observing effective CRM communications throughout.
- Ridgeline/Pinnacle/Rooftop Operations
  - The student shall understand the fundamentals of planning an approach to and departure from a pinnacle. This will include selection of the landing and takeoff locations, considering terrain, obstructions, wind direction and speed, and forced landing sites.
  - Same points as above for confined area operations.

- Goggle failure
  - The student will immediately notify all crew of an indication of NVG failure (flickering, dimming in one or both tubes and/or illumination of the red warning battery indicator).
  - If low level or on approach, initiate a climb to ensure obstacle clearance.
  - The student will select to the back-up battery pack. If NVG restored, continue NVIS flight, or if not restored, discontinue NVIS flight and transition to unaided NVFR flight.
  - The student will demonstrate correct procedures for transition from aided to unaided flight during goggle failure simulations.
  
- Unusual Attitude Recovery
  - **NOTE:**
    1. Any intervention required by the Instructor/Examiner during the U/A recovery shall result in the student failing this aspect.
    2. Because spatial disorientation occurs suddenly, the student should revert to an instrument scan while looking under the NVGs. The student should NOT make any attempt to de-goggle during the onset of spatial disorientation as this may exacerbate the situation.
    3. This is an Instrument flight task, requiring the use of instrument to accomplish.
  - The student must correctly analyse the aircraft attitude.
  - **Without delay**, the following must be completed in the correct order:
    1. **Attitude** – roll wings level on the attitude indicator/artificial horizon, AND THEN pitch the nose to the horizon.
    2. **Heading** – once you have leveled the wings, stabilize your heading and turn only if you need to avoid high terrain/a known obstacle.
    3. **Power** – Adjust power to climb power. Do not allow the aircraft to continue a descent.
    4. **Airspeed** – return to Vy or greater. Do not permit the airspeed to get too slow as this may exacerbate the spatial disorientation.

After the aircraft has reached a safe altitude and resumed normal flight, the student may elect to de-goggle. Exercise caution to avoid becoming spatially disoriented during de-goggling.
  - Maintaining flight parameters as per AC 91-13, para 4.2.1: i.e. acceptable instrument flight proficiency:
    1. Maintaining a nominated altitude within  $\pm 100$  feet, a nominated heading within  $\pm 5^\circ$ , balance within  $\frac{1}{2}$  ball deflection during straight and level flight and level turns; and
    2. Maintaining a rate one turn or a nominated angle of bank  $\pm 10^\circ$  during all turning manoeuvres to within  $\pm 10^\circ$  of pre-selected roll-out heading; and
    3. Maintaining a nominated climbing or descending speed within  $\pm 5$  knots. Level flight to be re-established at the pre-selected altitude  $\pm$  no more than 100 feet; and
    4. Performing an instrument recovery appropriate for the area of operations whilst maintaining the above manoeuvring limits; and
    5. Correctly identifying an aircraft unusual attitude and returns to straight and level references after a small delay, without entering a second unusual attitude while attempting to regain the references
  
- Simulated engine failure
  - During simulated engine failure the student will maintain RRPM within limits, airspeed within  $\pm 5$  Kts. and select a suitable landing area. Student will maintain heading (ground track for any wind) within  $10^\circ$ .
  - Landing light is turned on after entry to autorotation is completed
  - Maintenance of airspeed will require scanning of aircraft instrumentation.
  - Compensates for wind speed and direction as necessary to avoid under/overshooting the selected landing area, to terminate within 50 feet of selected landing area.

- Assesses flare altitude correctly by concentrating on correct scanning techniques, rather than solely referencing the RADALT. Do not increase the collective just before or during the initial part of the flare.
- Terminates approach with a power recovery at a safe altitude when directed by the Instructor/Examiner. Judging the leveling height will be a challenge due to the lack of peripheral cues and possible loss of visual contact with the ground (during flare profile).
- Hovering Autorotations/EOL's
  - Performs autorotation from a stationary hover into wind at the recommended height, maintaining established heading  $\pm 5^\circ$ .
  - Touches down with no rearward movement and minimum sideward movement.
  - Continues to scan correctly throughout the manoeuvre and not fixate – which can lead to difficult assessment of drift and descent rate (due degrade resolution and loss of stereopsis).

**LESSON FOUR (1.3 HOURS DUAL NVIS NIGHT)**

**I. OBJECTIVES:** During this lesson, the student shall review assigned NVG operations to gain proficiency and will be introduced to low speed maneuvers, terrain flight/low level operations and low level navigation under varying conditions.

**II. CONTENT:**

A. Preflight Briefing

B. Flight Lesson (Review)

1. Normal takeoff from a hover
2. Normal approach to a hover
3. Use of landing lights
4. Unusual Attitude Recovery
5. Running Landings
6. Maximum performance takeoff (NVG Takeoff)
7. Slope landings and takeoffs
8. Confined area landings and takeoffs
9. Pinnacle Operations
10. Goggle failure
11. Simulated engine failure
12. Hovering Autorotations

C. Flight Lesson (Introduce)

1. Terrain flight/low level operations
2. Navigation under varying terrain lighting conditions
3. NVIS cross country navigation
4. Inadvertent IMC
5. Aircraft system failures

**III. ASSESSMENT STANDARDS:**

- Terrain flight/low level operations/Searches
  - Descent to low level incorporates thorough airmanship considerations, a controlled descent and clearance of the area below.
  - Appropriate use of the searchlight, in conjunction with any other aircraft external lighting (landing, position, anti-collision) to assist crew with obstacle detection/clearance.
  - Students must exhibit correct scanning technique.
  - Students will be able to detect low level hazards – scanning for support structures, shadows, etc.
- NVIS cross country navigation & Navigation under varying terrain lighting conditions
  - Pre-flight planning to identify known hazards, MSA, airspace and navigation aids.
  - Student maintains orientation, visual tracking within 1km, identifies turn points, maintains altitude  $\pm$  100 feet and correct use of the RADALT.
  - The student has demonstrated an ability to interpret various terrain types and an understanding of effects of varying cultural lighting over terrain with dissimilar albedos.

- Inadvertent IMC
  - Correct pre-flight planning of airspace, communications and NAVAIDS available should IIMC be encountered.
  - Student to make transition to Instrument flight immediately, maintaining aircraft control (conducting U/A if required), maintaining heading – turning only to avoid known high terrain or obstacles.
  - Adjusts to climb power and airspeed.
  - De-goggles and configures cockpit lighting for IMC operations.
  - Contacts appropriate ATC unit and executes a IMC (IFR?) recovery
  - Correctly demonstrates effective CRM.
  
- Maintains the following flight parameters throughout:
  - Maintaining a nominated altitude within  $\pm 100$  feet, a nominated heading within  $\pm 5^\circ$ , balance within  $\frac{1}{2}$  ball deflection during straight and level flight and level turns; and
  - Maintaining a rate one turn or a nominated angle of bank  $\pm 10^\circ$  during all turning manoeuvres to within  $\pm 10^\circ$  of pre-selected roll-out heading; and
  - Maintaining a nominated climbing or descending speed within  $\pm 5$  knots. Level flight to be re-established at the pre-selected altitude  $\pm$  no more than 100 feet; and
  - Performing an instrument recovery appropriate for the area of operations whilst maintaining the above manoeuvring limits; and
  - Correctly identifying an aircraft unusual attitude and returns to straight and level references after a small delay, without entering a second unusual attitude while attempting to regain the references
  
- Aircraft system failures
  - Hydraulics Failure – as per Running Landing procedure.
  - Tail rotor – fixed pitch.
    - Execution similar to day profile. But, due to narrow field of view, effective scanning must be demonstrated to establish and maintain altitude, attitude and speed. No fixation on runway center lines.
  - General emergencies
    - Appropriate actions for the aircraft type to be carried out, while:
    - Maintaining situational awareness and aircraft control,
    - Displaying effective and clear CRM and communications to crew and ATC,
    - Ensures obstacle clearance at all times

**LESSON FIVE (1.3HOURS DUAL NVIS NIGHT)**

**I. OBJECTIVE:** This lesson is a flight evaluation check conducted by an approved NVIS Instructor to determine that the student meets the proficiency requirements for NVIS helicopter operations.

This may also be treated as consolidation as required for any student that may require additional NVIS instructional flight prior to completing the NVIS Initial Flight Test.

**II. CONTENT:**

- A. Preflight Briefing
- B. Flight Lesson (Check or Review as appropriate for the individual student).
  1. Flight profile to follow that as required by the NVIS Flight Initial Flight Check in Appendix III of AC 91-13, i.e.:
    - The NVIS Initial Flight Check must include the following:
      - **Written/Oral test**
        - Completion of the Skyline Aviation Ltd NVIS Ground Training Course Test
        - Oral questions concerning NVIS operations and Procedures, CARs and Company regulations and procedures
      - **Preparation**
        - Pre-flight planning
        - Crew briefing/responsibilities
        - Pre-flight inspections
          - NVIS
          - Aircraft
          - Before take-off NVG check
      - **Departure**
        - Take-off, hover, hover-taxi
        - Climb out
      - **Enroute**
        - Navigation along a pre-determined route
        - Adjustment in-flight
      - **Descent and landing**
        - Initial Reconnaissance
        - Normal approach
          - a. Clear area
          - b. Confined area
          - c. Point in space approach
        - Steep approach
        - Landings
          - Normal
          - Slope landings
        - Unaided approach to an unlit area

- **Systems procedures during any airborne phase**
  - Communication equipment
  - Navigation systems
  - Aircraft lighting systems
- **Emergency procedures during any airborne phase**
  - 1. NVG failure
  - 2. NVIS failure
  - 3. Unusual attitude recovery
  - 4. Inadvertent IMC recovery
  - **NOTE:** *This exercise must be demonstrated to the acceptable flight proficiency limits as listed in Lesson Four.*
- **Special procedures**
  - Any procedures specific to the operator's operation
- **Cockpit resource management**
- **Post flight procedures**

**C. Post flight Debrief**

- Debrief as required.
- Complete GCH NVIS training forms and certificate on completion of successful flight test.

**II. COMPLETION STANDARDS:**

The student shall demonstrate satisfactory proficiency and knowledge of NVG operations as outlined in the Skyline Aviation Ltd Operational procedures and NVIS training program, AC 91-13 and the CAA Practical Flight Test Standards Guide.