Pilot Training

H145 Helionix® / BK117 D2 Recurrent Training Course

4 Days

Ground School	**12 Hours**
Sim	**4 Hours**

Rev. 1.0

AIRBUS

SCOPE:

This course will provide a complete Recurrent Pilot Ground School on the H145 Helionix® Helicopter. Classroom instruction, the Pilot Training Manual, and various handouts, will provide complete information for a thorough understanding of the aircraft and its engine and related systems, with emphasis on Flight Manual usage including Normal and Emergency Procedures for the various aircraft systems and the aircraft's Limitations.

OBJECTIVE:

To teach the pilot the fundamental knowledge of the aircraft necessary to conduct safe and efficient ground, pre-flight and flight procedures in the H145. The pilot will be able to list the aircraft limitations, describe the functions and operations of the aircraft's systems, use the Flight Manual to obtain necessary information for safe and efficient operation of the aircraft, including knowledge of the aircraft charts necessary for safe and efficient operations.

COMPLETIN STANDARDS:

This course is complete when the student has demonstrated through flight training, written tests, and records that he/she is able to conduct operations, within the limits of the flight manual, safely and efficiently.

NOTICES:

Airbus Helicopters, Inc. reserves the right to notify customer of the occurrence of any force majeure condition that, in its sole discretion, is the cause of excusable delay. In the event of a force majeure condition, the services and/or classes will be extended or, if required, rescheduled for the first available opening. Airbus Helicopters, Inc. will not be liable for any costs, claims, or damages to customer or its employees arising from delays or interruptions caused by any force majeure condition.

The stated duration of the course is based on four student pilots per course.

Enrollment Prerequisites:

Acceptance into this course is based upon these requirements:

- A current FAA issued Helicopter Pilot Certificate or equivalent
- Valid Medical Certificate
- Current Helicopter Experience (Perform PIC duties within preceding 90 days of course start date)
- Completion of H145 (BK117 D2) Airbus or equivalent course in previous 5 Years

In special circumstances any of the above requirements may be waived with the approval of Airbus Helicopters, Inc.'s Chief Pilot.

0. WELCOME AND IN-PROCESSING — CL HRS: 0.5

1. **REFERENCES**: None

2. **SCOPE**: This block of instruction will cover registration, introduction, Contact info, Airbus Website, classroom procedures, miscellaneous, Goals, Completion Standards, What this course does not cover, Course Hierarchy, Course Content, Responsibilities.

3. **COMPLETION STANDARDS:** All required paperwork provided and validated by the instructor

1. HELIONIX ® — CL HRS: 2.0

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Instrument Panel, Components, MFD – Keys and Knobs, MFD – Main Display Formats, MFD – FND Display (Pilot/CoPilot), MFD – Synthetic Vision System, MFD – NAVD Displays, MFD – VMS Displays, MFD – DMAP Display, MFD – MISC Display, MFD – Default Configuration, MFD – Single MFD Failures, MFD – Dual MFD Failures, Helionix® – Alerting System, Alerting – Master List Principles, Alerting – Audio Principles, Alerting – Acknowledgement, Alerting – Degradation, Alerting – Warning Unit, Helionix® – Tests, VMS – Displays, Limitations, Normal Procedures, Emergency Procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the Helionix system including AMC architecture, MFD roles, normal functioning as well as typical pages, status information, failure modes, limits, normal procedures, and emergency procedures.

2. AVIONICS — CL HRS: 1.0

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Avionics Overview, Typical Antennas , Avionics Upper Deck , Avionics Consoles, Avionics Upper Deck Cooling, Intercom, VHF AM Communication , ELT, VOR, ILS, Marker Beacon, DME, Transponder, FMS (GPS), Radar Altimeter, Barometic Altitude, Decision Altitude, Integrated Electronic Stand-by Instrument, Limitations, Normal Procedures, Emergency Procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the normal use of the communication and navigation systems.

3. AUTOPILOT — CL HRS: 1.5

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover, Autopilot – SAS / AFCS Overview, Autopilot – Backup-SAS, AFCS – Components, AFCS – Controls, Instrument Panel, FDS – FND Status Information, FDS- FND AFCS Strip, FDS – FND/NAVD Nav Coupling, FDS - FND Master List Messages, FDS – VMD AFCS Status, AFCS – Preflight Test Overview, AFCS – AP/BKUP CUT Test, AFCS – Engagement , AFCS – Recovery, AFCS – Automatic Stick Centering, AFCS – Modes and Functions, AFCS – Flight Protections, Limitations, Normal Procedures, Emergency Procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the H145 FDS/AFCS inclduing it use, display interreatation, including relevant limits, normal procedures, and emergency procedures.

4. FUSELAGE — CL HRS: 0.5

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Fuselage – General, Airframe Structure, Cabin Structure, Drain System, Windshields / Windows, Doors, Cowlings, Handling, Parking / Mooring, Monitoring, Emergency Procedures

3. **COMPLETION STANDARDS**: The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the general layout of the fuselage and knowledge of the limits, normal, and emergency procedures.

5. FLIGHT CONTROLS — CL HRS: 0.5

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Main Rotor Controls, Parallel Actuators, Tail Rotor Controls, Hydraulic System, Main Rotor Actuators, Tail Rotor Actuators, Monitoring and Indication, Testing, Limitations, Normal procedures, Emergency procedures.

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the flight control systems, monitoring, testing, limits, normal procedures, and emergency procedures.

6. TAIL UNIT — CL HRS: 0.5

1. **REFERENCES**: RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Overview, Structure, Drive, Control, Monitoring, Limits & Normal Procedures, Emergency Procedures

3. **COMPLETION STANDARDS**: The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the trail rotor limitations, drive shaft, gearbox, lubrication system, control, and operation of the trail rotor including limits, normal, and emergency procedures.

7. LIFTING SYSTEM — CL HRS: 0.5

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE:** This block of instruction will cover Main transmission, Lubrication system, Main rotor system, Rotor blades, Rotor brake system, Mast Moment system, Monitoring and Indication , Limitations, Normal procedures, Emergency procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the drive, lubrication systems, monitoring and emergency procedures associated with the MGB, rotor brake, and mast moment system.

8. STANDARD EQUIPMENT — CL HRS: 0.5

1. **REFERENCES:** RFM Sections 2, 3, 4, 7 and 9.2

2. **SCOPE**: This block of instruction will cover Crew Seating, Passenger Seating, Ventilation, ECS, Lighting, Pulsed Chip Detector (Fuzz Burner), Inlet Barrier Filter

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of normal use and testing of the standard equipment including relevant limits, normal procedures, and emergency procedures.

9. LANDING GEAR — CL HRS: 0.5

1. **REFERENCES**: RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Landing Gear – General, Steps & Hydraulic Dampers, Ground Clearance Dimensions, Limitations, Normal procedures, Emergency procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the landing gear system including limiations, basic operations, monitoring, and emergency procedures.

10. POWERPLANT — CL HRS 1.0

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Power Plant Operation, Fire Warning & Extinguishing System, Engine Fuel System, Airframe Oil System, Engine Oil System, Engine Control System, Engine Monitoring / Indication, Engine Operations, Limitations, Normal Procedures, Emergency Procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the powerplant system including limits, normal procedures, and emergency procedures.

11. FUEL

CL HRS: 1.0

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7.

2. **SCOPE**: This block of instruction will cover Fuel System – Description, Fuel System – Tanks, Fuel System – Vents, Fuel System – Supply Lines, Fuel System – Equipment Plates, Fuel System – Fuel Pumps, Fuel System – Jet Pump, Fuel System – Fuel Pump Control, Fuel System – Fuel Pump Monitoring Fuel System – Shut-Off Valves, Fuel System – Shut-Off Valve Monitoring, Fuel System – Fuel Quantity Transmitters, Fuel System – Fuel Quantity Description, Fuel System – Fuel Quantity Indication, Fuel System – Fuel System Monitoring, Limitations, Normal Procedures, Fuel Warning, Cautions & Procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the fuel system including limits, normal procedures, and emergency procedures.

12. ELECTRIC POWER

CL HRS: 1.0

1. **REFERENCES:** RFM Sections 2, 3, 4, and 7

2. **SCOPE**: This block of instruction will cover Main Components, Equipment Location, Control Devices, System Overview, Consumer Buses, Battery System, Starter/Generator System, EPU, BUS TIE System, Operations, Limitations, Normal procedures, Emergency procedures

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot can demonstrate knowledge of the limits, normal, and emergency procedures associated with the electrical systems.

13. EXAM

CL HRS: 1.0

1. **REFERENCES:** RFM and TM

2. **SCOPE**: This block of instruction will include administering an open-book, multiple-choice Final Exam, with emphasis on use of the flight manual to obtain information, knowledge of basic aircraft systems, and the practical use of the Training Manual as a reference. A maximum time limit of one hour is permitted for administering the Final Exam

3. **COMPLETION STANDARDS:** The pilot will have successfully completed the lesson when the pilot achieves an 80% on the exam. If passed, all incorrect questions will be addressed to ensure a full understanding of the information.

FLIGHT TRAINING BREAKDOWN

1. **Flight 1: VFR Procedures, AFCS, and Aircraft Emergencies 2.0 hours**
   a. **References:** RFM, Pilot's Training Guide & Classroom Training Manual
   b. **Emergencies**: OEI, FADEC, Tail rotor
   c. **Preflight Preparation:**
      a) RFM Section 2 Limitations
      b) RFM Section 5 and 6 for W/B, Performance Planning
      c) RFM Section 4 Normal Procedures
      d) RFM Section 3 Emergency procedures
      e) RFM Section 7 and relevant supplements
      f) Check List Review
   d. **Objective:** The pilot trainee will be will continue to work on the specific tasks associated with startup/shutdown procedures using the checklist and basic VFR flight maneuvers with and without the autopilot. A multi-point VFR flight scenario will be completed using the autopilot leveraging the different modes. During this flight the pilot trainee will be introduced to limited emergency procedures such as engine failures FADEC malfunctions, and Tail Rotor issues. This flight will include the following items:
      a) Performance planning and limitations
      b) Check of weight and C.G.
      c) Cockpit management
      d) Use of checklists
      e) Multi-crew coordination
      f) Normal start-up procedures
      g) Engine power check
      h) Hover power check
      i) VFR flight procedures
      j) Normal procedures (normal t/o, normal landing, running landing)
      k) OEI procedures (CAT.B)
      l) AFCS upper modes
      m) Emergency procedures
      n) Normal shutdown procedures

2. **Flight 2: IFR Flight (VFR Flight may be substituted for Non IFR students) 2.0 hours**
   a. **References:** RFM, Scenario Listing, Pilot's Training Guide & Classroom Training Manual
   b. **Emergencies:** OEI , FND, and VMS
   c. **Preflight Preparation:**
      a) RFM Section 2 Limitations (H/V Curve)
      b) RFM Section 5 and 6 for W/B, Performance Planning
      c) RFM Section 3 Emergency procedures
      d) RFM Section 4 Normal Procedures
      e) Airport Information including Approach Plates, SID & STAR's
   d. **Objective:** This flight is IFR flight within controlled airspace utilizing the AFCS to two local airports using both precision and non-precision approaches. Including a missed approach and hold. The pilot will be introduced to a static system failure which might facilitate decoupling of the AFCS. This malfunction is an excellent way to introduce the risks of IFR helicopter flight without an AFCS and the potential for unusual attitudes. This flight includes the following items:
      a) Normal startup procedures
      b) Taxi procedures
      c) Normal IFR flight procedures
      d) FDS and ND Failure
      e) ILS and or LPV(Coupled with procedure turn & Missed, Uncoupled with OEI Landing)
      f) Full LNAV or LOC Approach (1 Coupled with procedure turn & Display Failure, 1 Uncoupled)
      g) Missed OEI and AEO
      h) Holding
      i) Normal Shutdown Procedures