

## SYL 1.0 AW139&PT6/A+E/L3

In compliance with "AMC to point 3.1(d) of Appendix III of Part-66" lessons start/finish hour can be adjusted as per exceptional cases.

Lesson	
Subject	Start Day
<b>ATA 00</b> - Air Vehicle INTRODUCTION <ul style="list-style-type: none"> <li>• Course registration and orientation to AW139 Airframe Maintenance Course (B1.3)</li> <li>• An introduction to the helicopter and performance, brief review of helicopter aerodynamics applied to the AB/AW139</li> <li>• Technical Publications</li> <li>• Overview of all applicable technical publications (AW139 IETP, LEONARDO web site and customer support)</li> </ul> AIRWORTHINESS LIMITATIONS (AMPI) <ul style="list-style-type: none"> <li>• retirements lives</li> <li>• mandatory inspections</li> <li>• certification maintenance requirements</li> </ul>	1
<b>ATA 05</b> - Time limits/maintenance checks	1
<b>ATA 06</b> - Dimensions/Areas (MTOM, etc.) <ul style="list-style-type: none"> <li>• Aircraft (dimensions / weights MTOM etc.)</li> <li>• Helicopter station diagram.</li> </ul>	1
<b>ATA -</b> - Zonal & Station Identification Systems	1
<b>ATA 20</b> - Standard practices – only type particular	1
<b>ATA 53</b> - Airframe Structure (Helicopter) AIRFRAME STRUCTURES <ul style="list-style-type: none"> <li>• Fuselage general description and construction.</li> <li>• General description, removal, installation and maintenance procedure for the fuselage tail boom, elevators, doors, windows, fairings, baggage compartment, cowlings and tail fin.</li> <li>• Related SB (tail boom, frame 5700)</li> </ul> STABILIZER <ul style="list-style-type: none"> <li>• General description</li> <li>• Winglets removal and installation</li> <li>• Assembly removal installation and rigging</li> </ul> DOORS <ul style="list-style-type: none"> <li>• General description</li> <li>• Installation and removal</li> <li>• Airspeed limitations for door open or removed</li> <li>• Cautions messages and microswitches</li> </ul> WINDOWS <ul style="list-style-type: none"> <li>• General description of flight compartment and cabin compartment windows</li> <li>• Installation and removal</li> </ul> STANDARD PRACTICES AND STRUCTURES <ul style="list-style-type: none"> <li>• Helicopter external surfaces - Paint and apply markings (brief description of touch up procedure and preparation for painting)</li> </ul>	1

Lesson	
Subject	Start Day
<b>ATA 07</b> - Lifting and Shoring <ul style="list-style-type: none"> <li>• Jacking</li> <li>• Slinging</li> <li>• Transporting</li> <li>• Safety issues related to above subjects</li> </ul>	2
<b>ATA 08</b> - Levelling and weighing <ul style="list-style-type: none"> <li>• Leveling</li> <li>• General information.</li> <li>• Helicopter center of gravity.</li> <li>• Weighing procedure.</li> <li>• Determination of center of gravity.</li> </ul>	2
<b>ATA 24</b> - Electrical Power <ul style="list-style-type: none"> <li>• General description of electrical power DC distribution circuits.</li> <li>• Description and operation of AB/AW139 electrical systems</li> <li>• Master warning and master caution lights operation description.</li> <li>• Maintenance procedure and operational checks</li> </ul>	2
<b>ATA 31</b> - Indicating/Recording Systems <ul style="list-style-type: none"> <li>• Instrument &amp; Control Panels</li> <li>• Central Display System</li> <li>• Central Warning Systems</li> <li>• Independent Instruments</li> <li>• Multi Purpose Flight Data Recorder</li> <li>• Cockpit Voice Recorder</li> </ul>	3
<b>ATA 31A</b> - Instrument Systems	3
<b>ATA 33</b> - Lights <ul style="list-style-type: none"> <li>• Flight Compartment</li> <li>• Passenger compartment</li> <li>• Cargo and Service Compartments</li> <li>• Exterior</li> </ul>	3
<b>ATA 29</b> - Hydraulic Power <ul style="list-style-type: none"> <li>• Systems description, operation and monitoring.</li> <li>• Components location, removal and installation procedure.</li> <li>• Description, operation and monitoring of the system and its related utilities, main/emergency supply, landing gear control valve LDGCV.</li> <li>• Major component removal and installation procedure.</li> <li>• Systems operational check and troubleshooting procedure.</li> <li>• Systems servicing procedure.</li> </ul>	4
<b>ATA 29A</b> - Hydraulic Power - Monitoring and indicating	4
<b>ATA 09</b> - Towing and taxiing <ul style="list-style-type: none"> <li>• Towing procedures</li> <li>• Maximum towing speed</li> <li>• Safety issues related with above subjects</li> </ul>	5
<b>ATA 10</b> - Parking/mooring, Storing & Return to Service <ul style="list-style-type: none"> <li>• Parking and mooring procedure.</li> <li>• Wind speeds for mooring</li> <li>• Safety issues related to above subjects</li> <li>• Storage of the helicopter for long or short term</li> </ul>	5

Lesson	
Subject	Start Day
<b>ATA 32</b> - Landing Gear <ul style="list-style-type: none"> <li>• Landing gear description (Normal and Emergency operation) and operation including shock absorber struts, wheels and tires, doors mechanism.</li> <li>• Removal and installation procedure.</li> <li>• Landing gear functional check.</li> <li>• Landing gear component servicing procedures.</li> </ul>	5
<b>ATA 32A</b> - Landing Gear - Monitoring and indicating	5
<b>ATA 67</b> - Rotors Flight Control <ul style="list-style-type: none"> <li>• Description and operation of collective, cyclic, anti-torque and elevator system.</li> <li>• Flight controls rigging procedure.</li> <li>• Flight controls major components removal and installation procedure.</li> <li>• Indicating System "SERVO" cautions-operational check</li> </ul>	6
<b>ATA 64</b> - Tail rotor <ul style="list-style-type: none"> <li>• Tail rotor hub and blades assy description and operation.</li> <li>• Tail rotor assy removal, installation and maintenance procedure.</li> <li>• Tail rotor blades removal, visual inspection, maintenance, and installation procedure.</li> <li>• Tail rotor hub and blades shimming</li> <li>• Tail rotor pitch change mechanism description, removal, installation and maintenance procedure.</li> </ul>	6
<b>ATA 62</b> - Rotors <ul style="list-style-type: none"> <li>• Main rotor hub assy and blades description and operation.</li> <li>• Main rotor hub components removal, installation and maintenance procedure.</li> <li>• Main rotor hub assy removal, and installation procedure.</li> <li>• Main rotor blade removal, installation and field maintenance procedure.</li> <li>• Description and operation and maintenance for swashplate, pitch link, scissors.</li> </ul>	7
<b>ATA 62A</b> - Rotors – Monitoring and indicating	7
<b>ATA 60</b> - Standard Practices Rotor	7
<b>ATA 18</b> - Vibration and Noise Analysis (Blade tracking) <ul style="list-style-type: none"> <li>• General introduction to vibration analysis</li> <li>• Rotors vibration analysis.</li> <li>• Main rotor tracking procedures.</li> <li>• Main and tail rotor dynamic balancing procedures.</li> <li>• Review of the various tools used for track and balance</li> </ul>	8
<b>ATA 45</b> - On-Board Maintenance System (or covered in 31) <ul style="list-style-type: none"> <li>• Central Maintenance Computer</li> <li>• CMC description and operation</li> </ul>	8
<b>ATA 25</b> - Equipment & Furnishings <ul style="list-style-type: none"> <li>• Flight/Passenger/Cargo compartment upholstery</li> <li>• Seats</li> <li>• Description and operation of the optional equipment as installed.</li> <li>• Removal/installation, maintenance procedure and functional check.</li> </ul>	9
<b>ATA 25A</b> - Electronic Equipment including emergency equipment	10
<b>ATA 95</b> - Emergency Flotation Equipment <ul style="list-style-type: none"> <li>• Description of system</li> <li>• Maintenance requirements</li> </ul>	10
<b>EXAM</b> Intermediate exam - 60 MCQ	10

Lesson		
Subject		Start Day
<b>ATA 63</b> - Rotor Drive <ul style="list-style-type: none"> <li>• General introduction to the power group, its purpose and arrangement.</li> <li>• Description and operation of the main transmission assy, mast and bell housing, freewheel units, takeoff drives and transmission mounting.</li> <li>• Transmission drive quill assy removal and installation procedure.</li> <li>• Free wheel units removal and installation procedure.</li> <li>• Transmission assy removal and installation procedure.</li> <li>• Main transmission oil system description, operation and monitoring component removal and installation procedures, visual inspection and servicing procedure.</li> <li>• Main transmission seals replacement procedures.</li> <li>• Description, operation, removal, installation and maintenance procedure for the Engine main drive shafts, Fan blower drive shaft, power output adapters, tail drive shaft, oil cooler and blower.</li> </ul>		11
<b>ATA 63A</b> - Rotor Drive – Monitoring and indicating		11
<b>ATA 65</b> - Tail rotor drive <ul style="list-style-type: none"> <li>• Tail Rotor drive shaft description</li> <li>• Intermediate Gearbox description and operation</li> <li>• Intermediate Gearbox, installation and maintenance procedures</li> <li>• Tail Rotor drive shaft removal, installation and maintenance procedure</li> <li>• Tail Gearbox description and operation</li> <li>• Tail Gearbox removal, installation and maintenance procedures</li> </ul>		12
<b>ATA 65A</b> - Tail Rotor Drive - Monitoring and indicating <ul style="list-style-type: none"> <li>• IGB indicating system</li> <li>• TGB indicating system</li> </ul>		12
<b>ATA 23</b> - Communications <ul style="list-style-type: none"> <li>• System description and component location</li> <li>• Troubleshooting</li> </ul>		12
<b>ATA 34</b> - Navigation <ul style="list-style-type: none"> <li>• Flight Environment Data</li> <li>• Attitude &amp; Direction</li> <li>• Landing and Taxiing Aids</li> <li>• Independent Position Determining</li> <li>• Dependent Position Determining</li> <li>• Flight Management Computing</li> </ul>		13
<b>ATA 11</b> - Placards and Markings		13
<b>ATA 12</b> - Servicing <ul style="list-style-type: none"> <li>• Servicing</li> <li>• Replenishing and depleting</li> <li>• Scheduled servicing</li> <li>• Unscheduled servicing</li> <li>• Support equipment connect/ disconnect procedures</li> </ul>		13
<b>ATA 22</b> - Autoflight <ul style="list-style-type: none"> <li>• Autopilot</li> <li>• 4 Axis Basic and Enhanced Flight Director System</li> </ul>		14
<b>ATA 30</b> - Ice & Rain Protection <ul style="list-style-type: none"> <li>• Air Intakes</li> <li>• Pitot and Static</li> <li>• Windshields Wipers</li> <li>• Air Data Modules indicating system</li> </ul>		14

Lesson		
Subject		Start Day
<b>ATA 21</b> - Air Conditioning AIR CONDITIONING - ENVIRONMENTAL CONTROL SYSTEM <ul style="list-style-type: none"> <li>• ECS description</li> <li>• Ventilation General</li> <li>• Heating</li> <li>• Air Conditioning General</li> <li>• Troubleshooting</li> </ul>		15
<b>ATA 21A</b> - Air Supply		15
<b>ATA 21C</b> - Safety and Warning Devices <ul style="list-style-type: none"> <li>• Indicating systems</li> <li>• Safety and warning devices</li> </ul>		15
<b>ATA 26</b> - Fire Protection <ul style="list-style-type: none"> <li>• Description and operation of Detection System (Engines and Baggage compartment)</li> <li>• Description and operation of Extinguishing System</li> <li>• Maintenance procedures and operational checks</li> <li>• Monitoring system (CMC interface)</li> </ul>		15
<b>ATA 50</b> - Cargo and Accessory Compartments <ul style="list-style-type: none"> <li>• Baggage compartment description</li> <li>• LRU component location</li> <li>• Chapter 25, 26, 33 interfaces</li> </ul>		15
<b>ATA 28</b> - Fuel Systems <ul style="list-style-type: none"> <li>• System description, operation and monitoring.</li> <li>• Components removal and installation procedure.</li> <li>• System operational check, troubleshooting procedure.</li> </ul>		16
<b>ATA 28A</b> - Fuel Systems - Monitoring and indicating		16
<b>ATA 71</b> - Powerplant		17
<b>ATA 72</b> - Engine Turbine/Turbo Prop/Ducted Fan/Unducted Fan <ul style="list-style-type: none"> <li>• General description of the Engine Compressors</li> <li>• General description of the Engine Turbines</li> <li>• General description of the Accessory Gearbox</li> <li>• General description of the Combustion chambers</li> <li>• General description of the Exhaust</li> <li>• General description of the Oil system</li> <li>• General description of the Fuel Control System</li> </ul>		17
<b>ATA 70</b> - Standard Practices – Engines		17
<b>ATA 70A</b> - Constructional arrangement and operation		17
<b>ATA 70B</b> - Engine Performance		17
<b>ATA 75</b> - Air <ul style="list-style-type: none"> <li>• General description of the Air Inlet</li> <li>• General description of the Bleed Valve and his adjustments</li> </ul>		18

Lesson		
Subject		Start Day
<b>ATA 73</b> - Engine Fuel and control <ul style="list-style-type: none"> <li>• General description of the helicopter Engine Fuel and control System</li> <li>• Fuel Management Module (FMM).</li> <li>• Fuel Heater</li> <li>• Ecology Accumulator</li> <li>• Fuel Nozzle</li> <li>• Fuel System Troubleshooting</li> </ul>		18
<b>ATA 74</b> - Ignition <ul style="list-style-type: none"> <li>• General description of the Engine Ignition system</li> <li>• Maintenance practices related to the System</li> </ul>		18
<b>ATA 80</b> - Starting		19
<b>ATA 83</b> - Accessory Gear Boxes		19
<b>ATA 79</b> - Oil		19
<b>ATA 78</b> - Exhaust		20
<b>ATA 76</b> - Engine controls <ul style="list-style-type: none"> <li>• General description of the helicopter Engine Controls</li> <li>• Rigging of the Engine Control Lever</li> <li>• Overview of EEC mode of operation</li> </ul>		20
<b>ATA 77</b> - Engine Indicating Systems		20
<b>EXAM</b> Final exam - 60 MCQ		20