TRAINING MANUAL
PART 2

GLOBAL AIR SERVICES

◇

GR-FTO-002

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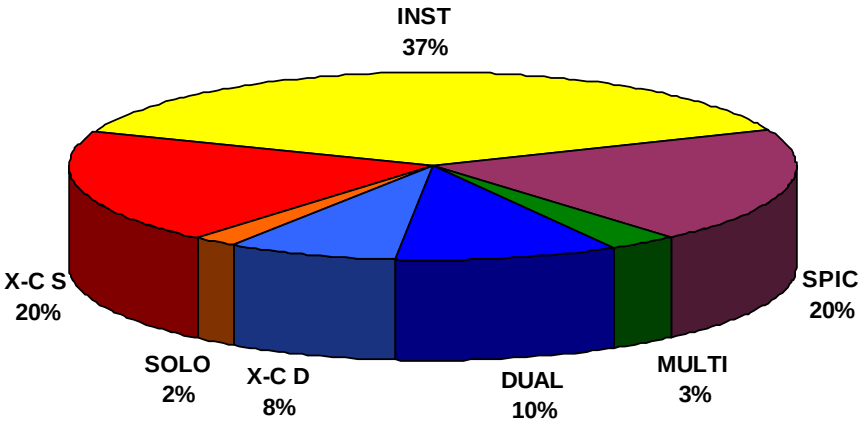
2 Briefing and Air Exercises

2.1 ATPL(A) Integrated Course

2.1.1 Course Structure

The flying training of ATPL (A) is divided into five (5) phases and the air exersices are allocated in the different phases as anylized in the following table:



PHASE 1	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1: Aircraft Familiarization and Preparation for Flight								2
Exercise 2: Preparation for and action after flight								2
Exercise 3: Air experience	1							
Exercise 4: Effects of controls – Attitudes and Movements	1							
Exercise 5: Taxiing and Ground Emmergencies	1							
Exercise 6: Straight and Level Flight	1							
Exercise 7: Climbing	1							
Exercise 8: Descending	1							
Exercise 9: Turning	1							
Exercise 10A: Slow Flight	1							
Exercise 10B: Stalls	1							
Exercise 11: Spin avoidance	1							
Exercise 12: Take-off and climb to downwind position	1,5							
Exercise 13: Circuit approach and landing	2							
Exercise 13E: Emergencies	1,5							
Exercise 14: Stage Check 1st SOLO	1	0,5						
	16	0,5	0	0	0	0	0	4
PHASE 2								
Exercise 16: Forced landing without power	2	1,5						
Exercise 17: Precautionary landing	2	1,5						
Exercise 18A: Introduction to Navigation			1					
Exercise 18B Navigation problems at lower levels and in reduced visibility			1					
Exercise 18C Radio navigation			2					
Exercise 19 Introduction to Instrument Flight					1			
Exercise 20 Local Area SOLO				3				
Exercise 19A: Basic Instruments – Pattern “A”					1			
Exercise 19b: Basic Instruments – Pattern “B”					1			
Exercise 21: Advancing to Navigation			4					

Exercise 25: X-Country SOLO				6				
Exercise 26 DUAL X-Country Triangle			7					
Exercise 27 SOLO X-Country Triangle 150 NM				6				
	4	3	15	15	3	0	0	0
PHASE 3								
Exercise 28 SOLO Long X-Country Preparation				20				
Exercise 29 SOLO X-Country Triangle 300 NM				5				
	0	0	0	25	0	0	0	0
PHASE 4 – IR								
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					2			
Exercise 31: Unusual Attitudes and Recovery					1			
Exercise 32 Use of Partial Panel					3			
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					3			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					2			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					2			
Exercise 36: VOR Non - Precision Approach Procedure					5			
Exercise 37: NDB Non - Precision Approach Procedure					5			
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures					9			
Exercise 39: Precision Approach Procedure					6			
Exercise 40: Long IR X-Country					9,5			
Exercise 41: SPICUS						40		
Exercise 42: Night Rating		0,5			4,5			
	0	0,5	0	0	52	40	0	0

PHASE 4 - MULTI-ENGINE TRAINING								
Exercise 50: Introduction to Multi Engine Principles								6
Exercise 51: Take-Off and Climb							1	
Exercise 52: Straight and Level Flight - Descend							1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure							2	
Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"							2	
Exercise 55: IR – Multi Engine Piston - Emmergencies					5			
	0	0	0	0	5	0	6	6
PHASE 5 - MCC								
MCC Theoritical Training								20
MCC Simulator					15			
	0	0	0	0	15	0	0	20
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**20**	**4**	**15**	**40**	**75**	**40**	**6**	**30**

2.1.2 PHASE 1

OBJECTIVE: During this phase the student shall do exercises up to the first solo flight comprised a total of at least 15 hours dual flight instruction on a single engine aircraft.

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Training Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 3: Air experience

EXERCISE OBJECTIVE: The student will become familiar with the training airplane, its operating characteristics, flight controls, basic instruments and systems, pre-flight procedures, proper use of the checklist, and general good operating techniques and safety procedures. Instruction will be given in manoeuvring the airplane on the ground and in basic flight manoeuvres using the horizon (no the attitude indicator. Instructor must demonstrate all manoeuvres initially hiding ASI, VSI, etc). In flight training, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon. As basic flying skills are developed through training and experience, the pilot will acquire an awareness of these references.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the training airplane and safe operating techniques should be demonstrated.

Note: The notation (VR/IR) will be used throughout this syllabus to indicate the use of integrated instruction. Each new manoeuvre will be introduced by visual reference (VR) and attitude instrument reference (IR)

Flight Lesson

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Performing pre-flight line inspection to include required aircraft documents
- ✓ Correct use of the checklist
- ✓ Engine start and engine controls
- ✓ Radio communications on the ground and in flight
- ✓ Taxi -speed and directional control including use of brakes
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal takeoff
- ✓ Traffic pattern departure
- ✓ Local area familiarization which may include short point to point flight
- ✓ Straight and level flight (VR)
- ✓ Trim technique
- ✓ Medium banked turns (VR) and how to clear for traffic before turning
- ✓ Climbs (VR)
- ✓ Glides (VR)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane

Exercise 4: Effects of controls – Attitudes and Movements

EXERCISE OBJECTIVE: The student will become familiar with the controls of the aircraft and the effect of them during flight. Again, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be demonstrated.

Flight Lesson

- ✓ Primary effects when laterally level and when banked using the aileron and the rudder
- ✓ Effects of Airspeed and Power using the elevator during climb descend.
- ✓ Trimming controls (Nose attitude and then trim for straight and level, climb and descend)
- ✓ Flaps. Effects of Nose Attitude, Airspeed and Power
- ✓ Operation of Mixture control, Carburetor heat, Cabin heating/ventilation

Exercise 5: Taxiing and Ground Emergencies

EXERCISE OBJECTIVE: The student will be familiar with taxiing procedures normal and emergencies also with the aircraft parking area of the Global Air Services.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, without assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to taxi for take off and to the parking area after landing. The student shall be able to secure the airplane and fill the appropriate documents (tech log etc) by himself.

Flight Lesson

- ✓ Pre-taxi checks
- ✓ Starting, control of speed and stopping
- ✓ Engine handling
- ✓ Control of direction and turning
- ✓ Turning in confined spaces
- ✓ Parking area procedure and precautions
- ✓ Effects of wind and use of flying controls
- ✓ Effects of ground surface
- ✓ Freedom of rudder movement
- ✓ Marshalling signals
- ✓ Instrument checks
- ✓ Air traffic control procedures
- ✓ Emergencies
    - o Brake and steering failure

During the flight further training of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be given according to objectives of the Exercise 4 including demonstration of:

- ✓ Shallow turns
- ✓ Medium turns
- ✓ Steep turns
- ✓ Climb
- ✓ Descend
- ✓ Glides

Exercise 6: Straight and Level Flight

EXERCISE OBJECTIVE: The student will review and practice the four fundamentals forces of flight. Also, the student will be introduced further to climbing and throttle control, rudder control, and level off procedures. The student will perform communications, taxi and take-of rolls. Aircraft stability will be demonstrated to instil confidence and stress the importance of proper trim.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with no assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis performing climbs, descends and shallow – medium turns. A general understanding of the traffic pattern and landings techniques should be demonstrated.

Pre-flight Discussion and Briefing

(The pre-flight briefing will be performed by the student with the instructor assistance)

- ✓ Current and forecast weather/Notams
- ✓ Performance planning/weight and balance
- ✓ The Forces
- ✓ Longitudinal Stability and Control in Pitch
- ✓ Relationship of C of G to Control in Pitch
- ✓ Lateral and Directional Stability (Control of Lateral Level and Balance)
- ✓ Attitude and Balance Control Trimming
- ✓ Power Settings and Airspeeds
- ✓ Drag and Power Curves
- ✓ Range and Endurance

Flight Lesson

- ✓ Normal takeoff (performed by the student assisted by the instructor)
- ✓ Traffic pattern departure
- ✓ Normal climb (performed by the student assisted by the instructor)
- ✓ Straight and level at normal cruising power, attaining and maintaining straight and level flight (performed by the student without any assistance)
- ✓ Medium and steep turns (performed by the student assisted by the instructor)
- ✓ Glides (performed by the student assisted by the instructor)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane (performed by the student without any assistance)

Exercise 7: Climbing

EXERCISE OBJECTIVE: The student will review and practice the fundamentals of climb, turns, descend, glide, and turns in order to increase proficiency. The student also will perform takeoff assisted by the instructor.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to conduct all pre-flight operations and establish proper pitch attitude and power for climbs without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of the relationship between Power/Airspeed and Rate of Climb
- ✓ Maximum Rate of Climb (Vy) and Maximum Angle of Climb (Vx) (Effect of: Mass, Flaps and density Altitude)

Flight Lesson

- ✓ Use of checklist (performed by the students without any help)
- ✓ Pre-flight checks and engine start (performed by the students without any help)
- ✓ Radio communications (performed by the students without any help)
- ✓ Taxi (performed by the students without any help)
- ✓ Pre-takeoff checks (run-up) (performed by the students without any help)
- ✓ Normal takeoff (performed by the students without any help)
- ✓ Traffic pattern departure and entry (performed by the students assisted by the instructor)
- ✓ Straight and level (performed by the students without any help)
- ✓ Climbing (performed by the students without any help)
    - o Entry, maintaining the normal and max rate climb
    - o levelling off
    - o levelling off at selected altitudes
    - o Control in pitch, including use of trim
    - o En-route climb (cruise climb)
    - o climbing with flap down
    - o Maximum angle of climb
    - o Introduction to Slow Flight (ΒΑΠΕ – ΒΑΠΕ)
- ✓ Glides (performed by the students assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 8: Descending

EXERCISE OBJECTIVE: The student will demonstrate his ability to perform climbs and turns. The instructor will review descends and glides in order to increase student's proficiency. Also, the student will be introduced to combine rudder control and ailerons during S-turns (συνδυασμός πηδαλίων). A demonstration to slow flight (ΒΑΠΕ-ΒΑΠΕ) also will be repeated

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to perform without any assistance and establish proper pitch attitude and power for descends and glides. The student also will be able to perform Slow Flights and S-turns with the instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams (Performed by the student)
- ✓ Review performance planning/weight and balance (Performed by the student)
- ✓ Glide Descent Angle -Airspeed -Rate of Descent (Performed by the student)
- ✓ Effect of Flaps (Performed by the student)
- ✓ Effect of Wind (Performed by the student)
- ✓ Effect of Mass (Performed by the student)

Flight Lesson

- ✓ Use of checklist (Performed by the student)
- ✓ Pre-flight checks and engine start (Performed by the student)
- ✓ Radio communications (Performed by the student)
- ✓ Taxi (Performed by the student)
- ✓ Pre-takeoff checks (run-up) (Performed by the student)
- ✓ Normal takeoff (Performed by the student)
- ✓ Traffic pattern departure and entry (Performed by the student)
- ✓ Straight and level (Performed by the student)
- ✓ Climbs (Performed by the student)
- ✓ Descends and Glides (Performed by the student assisted by the instructor)
    - o Entry, maintaining and levelling off
    - o Levelling off at selected altitudes
    - o Glides
- ✓ Slow Flight (ΒΑΠΕ – ΒΑΠΕ) (Performed by the student assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 9: Turning

EXERCISE OBJECTIVE: The student will review and practice climb, descends and glide turns, to increase proficiency. Also, the student will review S-turns. The student will perform taxi and takeoff.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to establish proper pitch attitude and power for turns (climbing and descending) without instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Climbing and Descending Turns
- ✓ Turning onto Selected Headings -Use of Gyro Heading Indicator and Magnetic Compass

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)

Flight Lesson (Introduce) Air Exercise 9 Turning

- ✓ Entry and maintaining medium level turns
- ✓ Climbing turns
- ✓ Descending turns
- ✓ Turns onto selected headings, use of gyro heading indicator and compass
- ✓ Entry and maintaining steep turns

Exercise 10A: Slow Flight

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student will be expected to control airspeed in all manoeuvres within ± 10 kts, heading within 10° and ± 50 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius
- ✓ Airmanship using flaps at low airspeeds

- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 10B: Stalls

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce stalls.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Stall recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Characteristics of the Stall
- ✓ Angle of Attack
- ✓ The Effectiveness of the Controls at the Stall
- ✓ Factors Affecting the Stalling Speed:
    - o Effect of Flaps/Slats/Slots
    - o Effect of Power/Mass/C of G/Load Factor
    - o The Effects of Unbalance at the Stall
- ✓ The Symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Stalling & Recovery:
- ✓ Without Power
- ✓ With Power On
- ✓ With Flaps Down
- ✓ Stalling and Recovery at the Incipient Stage with 'Instructor Induced' Distractions

* Stalling & Recovery during manoeuvres involving more than 1 G (accelerated stalls, including, secondary stalls & recoveries). Consideration is to be given to manoeuvre limitations and references to The Owners/Flight manual or Pilot's Operating Handbook must also be made in relation to Mass and Balance limitations. These factors must also be covered in the next exercise spinning.

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level

- ✓ Climbs
- ✓ Descends
- ✓ Medium & steep turns
- ✓ Slow Flight

Flight Lesson (Introduce) Air Exercise 10 B Stalling

- ✓ Airmanship
- ✓ Safety checks (1A 5E)
- ✓ The symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Recovery without Power
- ✓ Recovery with Power
- ✓ Recovery when a Wing Drops at the Stall
- ✓ Stalling with Power 'ON' & Recovery
- ✓ Stalling with Flap 'Down' & Recovery
- ✓ Stalling with Power 'OFF' & Recovery
- ✓ Repetitive Stall

Exercise 11: Spin avoidance

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce spins.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Spin recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ SPIN RECOVERY at the INCIPIENT STAGE
- ✓ Causes, Stages, Autorotation and Characteristics of the Spin
- ✓ Recognition and Recovery at the Incipient Stage -entered from various flight attitudes Aeroplane
- ✓ Limitations
- ✓ Airmanship -Safety Checks
- ✓ SPIN RECOVERY at the DEVELOPED STAGE
- ✓ The Spin Entry
    - o Recognition & Identification of Spin Direction
    - o The Spin Recovery
    - o Use of Controls
    - o Effects of Power/Flaps (flap restriction applicable to type)
    - o Effect of the C of G upon spinning characteristics
    - o Spinning from Various Flight Attitudes
    - o Aeroplane Limitations
    - o Airmanship -Safety Checks
    - o Common Errors during Recovery

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 11A/ B Sinning

AIR EXERCISE 11 A SPIN RECOVERY at the INCIPIENT STAGE

- ✓ Aeroplane Limitations.
- ✓ Airmanship
- ✓ Safety Checks

- ✓ Recognition at the Incipient Stage of a Spin
- ✓ Recoveries from Incipient Spins entered from various attitudes with the Aeroplane in the Clean

AIR EXERCISE 11 B SPIN RECOVERY at the DEVELOPED STAGE - Aeroplane Limitations

- ✓ The Spin Entry
- ✓ Recognition & Identification of the Spin Direction the Spin
- ✓ Recovery (reference to Flight Manual)
- ✓ Effects of Power/Flaps (restrictions applicable to aeroplane type)

NOTE: Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.

Exercise 12: Take-off and climb to downwind position

EXERCISE OBJECTIVE: In addition to providing a review of manoeuvres previously presented, the student will be introduced to different climb and descent configurations and how to transition from one to the other. Loss of engine power emergency procedures during takeoff and climb out will also be introduced.

COMPLETION STANDARDS: The student should display, through performance and discussion, complete understanding of possible emergencies and procedures to use during takeoff. The student shall maintain airspeeds with increased awareness of impending stalls and positive coordinated control usage becoming more consistent. Configuration changes shall be accomplished with correct usage of throttle control and trim technique. Principles of aircraft control during landing should be understood.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Handling- Factors affecting the length of Take-off Run and Initial Climb
    - o The Correct Lift Off Speed, use of Elevators (Safeguarding the Nose Wheel), Rudder and Power
    - o Effect of Wind (including Crosswind Component)
    - o Effect of Flaps (including the Decision to Use and the Amount Permitted)
    - o Effect of Ground Surface and Gradient upon the Take-off Run
    - o Effect of Mass, Altitude and Temperature on Take-off and climb Performance
    - o Pre Take-Off Checks
    - o Air Traffic Control Procedure (before Take-Off)
    - o Drills, during and after Take-off
    - o Short/Soft Field Take-Off Considerations/Procedures
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Airmanship and Air Traffic Control Procedures

Flight Lesson (Review)

- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 12 Take-off and landing to downwind position

- ✓ Pre Take-Off Checks
- ✓ Into Wind Take-Off
- ✓ Crosswind Take-Off
- ✓ Drills During and After Take-Off

- ✓ Short Take-Off and Soft Field Procedure/Techniques (including Performance Calculations)

Exercise 13: Circuit approach and landing

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 13E: Emergencies

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce procedures to employ during partial or complete loss of power while on any leg of the traffic pattern.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing (unassisted). Safe control of approach and landing following simulated loss of power on downwind will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Wake Turbulence Awareness
    - o Wind shear Awareness
    - o Airmanship and Air Traffic Control Procedures
    - o Mislanding/Go around
    - o Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Emergencies

- ✓ Aborted Take-Off
- ✓ Engine Failure after Take-Off
- ✓ Glide Approach (High Altitude Engine Failure and Emergency Landing)
- ✓ Miss-landing/go-around

Exercise 14: Stage Check 1st SOLO

EXERCISE OBJECTIVE: The objective of this flight is to determine if the student possesses a working knowledge of regulations and safe operating procedures, as well as the competency to pilot an aircraft in solo flight.

COMPLETION STANDARDS: The student shall demonstrate the knowledge and skill to perform the listed manoeuvres and procedures and for continued solo flight in the local training area. The following standards will apply:

- ✓ Hold attitude to within ±200 feet of assigned
- ✓ Hold heading to within ±15° of assigned
- ✓ Maintain airspeed to within ±10 kts of desired
- ✓ Recognition of stalls with prompt, positive recovery
- ✓ Safe traffic patterns exercising collision avoidance techniques
- ✓ Demonstrate the ability to execute safe takeoff and landings
- ✓ Safely handle emergency situations presented with no loss of control

Pre-flight Discussion and Briefing - Oral Examination

- ✓ Test knowledge of aircraft
- ✓ Test knowledge of JAR-FCL flight rules which are pertinent to student solo flights
- ✓ Test knowledge and awareness of good operating practices

Stage Check Flight Test

- ✓ Extensive pre-flight, engine start and run-up
- ✓ Taxiing
- ✓ Normal/crosswind takeoff and departure
- ✓ Turns
- ✓ Climbs
- ✓ Glides
- ✓ Slow flight
- ✓ Stall -power off
- ✓ Stall -power on
- ✓ Collision avoidance procedures
- ✓ Traffic pattern operations
- ✓ Normal/crosswind approach and landing
- ✓ Simulated loss of engine power shortly after takeoff and while on downwind
- ✓ Use of Checklist
- ✓ Parking
- ✓ Engine shut down and securing airplane

2.1.3 PHASE 2

OBJECTIVE: During this phase the student shall do exercises up to the first solo cross-country flight comprise a total of at least 15 hours of dual flight instruction and at least 20 hours solo flight on a single-engine aeroplane.

Exercise 16: Forced landing without power

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18A: Introduction to Navigation

EXERCISE OBJECTIVE: To re-familiarize the student with the local practice area and to improve proficiency with more advanced manoeuvres in preparation for local area solo practice flights. The student will be instructed in the planning and conducting of cross-country flights using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o map selection and preparation, choice of route, controlled airspace
    - o danger, prohibited and restricted areas, safety altitudes
    - o calculations, magnetic heading(s) and time(s) en-route, fuel consumption
    - o mass and balance, mass and performance
    - o flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
    - o aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
    - o Departure
    - o organisation of cockpit workload
    - o departure procedures
    - o altimeter settings
    - o ATC liaison in controlled/regulated airspace
    - o setting heading procedure
    - o noting of ETAs
    - o maintenance of altitude and heading
    - o revisions of ETA and heading
    - o log keeping
    - o use of radio, use of navaids
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o transiting controlled/regulated airspace
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ departure procedures, altimeter settings
- ✓ ATC liaison in controlled/regulated airspace
- ✓ setting heading procedure, noting of ETAs, maintenance of altitude and heading
- ✓ revisions of ETA and heading
- ✓ log keeping
- ✓ use of radio, use of navaids
- ✓ minimum weather conditions for continuation of flight, in-flight decisions
- ✓ diversion procedures
- ✓ uncertainty of position procedure
- ✓ lost procedure
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o altimeter setting
    - o entering the traffic pattern
    - o circuit procedures

Exercise 18B Navigation problems at lower levels and in reduced visibility

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce navigation problems at lower levels and in reduced visibility.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing. Safe control of aircraft and correct decision making at lower levels and in reduced visibility will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o actions prior to descending
    - o hazards (e.g. obstacles, and terrain)
    - o difficulties of map reading
    - o effects of wind and turbulence
    - o avoidance of noise sensitive areas
    - o joining the circuit
    - o bad weather circuit and landing

Flight Lesson (Review)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Navigation problems at lower levels and in reduced visibility
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Actions Prior to Descending
    - o Effects of Wind and Turbulence

- Hazards of operating at low levels
- Low Cloud and Good Visibility
- Low Cloud and Poor Visibility
- Avoidance of Moderate to Heavy Rain Showers
- Effects of precipitation (forward visibility)
- bad weather circuit and landing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight

- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 20 Local Area SOLO

EXERCISE OBJECTIVE: To develop student's confidence and proficiency through area solo practice of assigned manoeuvres

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: First area solo: The instructor must be on the tower in order to supervise the take-off, land and student's communications. The flight will be performed at the DAPORI – AIGINA area or LGMG – ALEPOCHORI - ALKYON.

Pre-flight Discussion and Briefing

- ✓ Pre X-Country Solo written test passed
- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson Area solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (with the minimum assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
- ✓ departure procedures
- ✓ ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19B: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 21: Advancing to Navigation

EXERCISE OBJECTIVE: To re-familiarize with dispatch procedures, pre-flight planning, post flight requirements, and to the student's proficiency in cross-country planning procedures. The student must be prepared in order to conduct a cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment. A very good review also in the emergency landings and emergency procedures will be performed in order to develop the ability to take proper action in emergency situations.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: The flight will be performed at the IKAROS - KOPAIDA area. Forced – emergency landings will be performed at IKAROS or KOPAIDA and returning on the airport (Megara) at 2500 to 3500 feet.

Note 3: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (with minimum assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student is able to determine position (with assistance) in the practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern. The student also must be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course making the appropriate radio communications. The student should be competent in navigating by means of pilotage, dead reckoning, VOR, and / or ADF, and when so instructed, is able to accurately plan and fly a diversion to an alternate airport. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure".

Note 3: The student has to be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should also be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Selection of forced landing areas
    - o Provision for change of plan
    - o Gliding distance -consideration
    - o Planning the descent Key positions
    - o Engine failure checks

- Use of radio -R/T 'Distress' Procedure
- The base leg
- The final approach
- Go around
- The landing considerations
- Actions after landing -Aeroplane security
- Causes of engine failure

✓ Advancing to QDM Meaning and Use (VOR/ADF)

Considerations are to be given to airplane performance, Mass & Balance and NAV Log calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

✓ Normal / crosswind takeoff and landing
✓ Short/Soft field takeoff and landing
✓ Traffic pattern departure and entry
✓ Compass turns
✓ NDB & VOR Homing
✓ Position determination on the map using VOR & NDB
✓ Dead reckoning pilotage
✓ Forced Landing Procedures
✓ Selection of Landing Area
✓ Gliding Distance Considerations
✓ Planning the descent:
- Key Positions
- Engine Failure Checks
- Engine cooling precautions

✓ Use of Radio
✓ The Base Leg
✓ The Final Approach
✓ The Landing } When the Exercise is
Actions after Landing } conducted at an
Aeroplane Security } Aerodrome
✓ Airmanship

Exercise 25: X-Country SOLO

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two hours day cross-country flight. The student must be well prepared in order to conduct a SOLO cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG or LGMG – ALEPOCHORI – GERMI – LARIMNA - MANTOUDI – SKIATHOS and reverse route or LGMG – DAPORI – KOR – IXONI – RIO- MESSI – RIO - IXONI – KOR – DAPORI or LGMG – DAPORI – EGN – YDRA – LGPH – YDRA – EGN - DAPORI.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep time using map time-lines and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Opening and closing VFR flight plan, Procedure at unfamiliar airports
- ✓ Emergencies, Pre X-Country Solo written test passed
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson X-Country solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (without any assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
    - o departure procedures
    - o ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace

- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 26 DUAL X-Country Triangle

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 2-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. To introduce to the student the VFR routes.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

Note 2: The Student must be prepared for the following X-Country:

- ⇒ LGMG – ALEPOCHORI – GERMI – LARIMNA – AIDIPSOS – LGBL. LGBL – LGSK. LGSK – MADOUDI – PSACHNA – CHALKIS – OROPOS – MALAKASA – LIMNI – OAKA – XOLARGOS – LGAT – EGN – LGMG.
- ⇒ LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG OR LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG.
- ⇒ LGMG – DAPORI – KOR – IXONI – ARA – LGZA, LGZA – LGKF – MESSI – RIO – IXONI – KOR – DAPORI - LGMG

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure". The student must also be able to execute promptly and safely and without any hesitation emergency procedures like engine failure, electrical load failure, smoke and fire etc.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of lessons 18A, 18B, 18C

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)

Flight Lesson (Introduce) Air Exercise Radio Navigation

- ✓ Use of VHF Omni Range (USE SKOPELOS, ALMIROS,TANAGRA or ARA, DDM, KEA, ATV)
- ✓ Availability, AIP, frequencies

- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)
- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies (USE LGSK and EGN)
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

Exercise 27 SOLO X-Country Triangle 150 NM

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two and half hours day cross-country flight with landings at two unfamiliar airports. To improve the student's proficiency in navigating by means of pilotage, dead reckoning, VOR, and / or ADF; and to further increase the student's confidence and ability to properly handle unexpected flight situations.. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at different airpots as in exercise 26 instructed.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course, Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedure at unfamiliar airports
- ✓ Emergencies

2.1.4 PHASE 3

OBJECTIVE: During phase 3 the student will review previous manoeuvres from phases 1 & 2.The student will also have to pass a navigation progress test in order to be able to make the long x-country flight and to further built-up hours as pilot in command

Exercise 28 SOLO Long X-Country Preparation

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's proficiency in cross-country operations by planning and flying a 3 hour solo day cross-country flight using routes not previously assigned. To improve the students proficiency in navigating by all available means, including pilotage, dead reckoning, VOR, and flight following. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at previously visited airports such as LGZA, LGKF, LGSK, LGSO, LGMK, LGNX.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student has conducted the flight as assigned. The completed navigation log will be reviewed, approved by the instructor, and the student debriefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course
- ✓ Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedures (arrival – departure) at the destination
- ✓ AIP, Airport diagram, Comms etc.
- ✓ Emergencies (questions by the instructor)

Exercise 29 SOLO X-Country Triangle 300 NM

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 5-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. Further familiarization with routes and long distanced airports.

Note 1: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and fixes from known Radio Aids (VOR & NDB).

Note 2: The Student must be prepared to land at :

- ⇒ LGMT, LGHI or
- ⇒ LGKO, LGPL
- ⇒ LGKO, LGRP
- ⇒ LGSM, LGLX
- ⇒ LGKF, LGRK
- ⇒ LGKC, LGIR

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, without any assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes.

The completed navigation log will be reviewed, approved by the instructor, and the student briefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

The questions should be about off-course corrections procedures and "simulated lost" situation, or other emergencies. The student should be able to answer without hesitation.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)
- ✓ Use of VHF Omni Range (USE available radio aids)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)

- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

2.1.5 PHASE 4 – IR AND MULTI-ENGINE TRAINING

OBJECTIVE: The emphasis of phase 4 is on IR operations and multi-engine training. The student will learn precise airplane attitude control by instrument reference. Additionally, the student will gain greater competence in the use of navigation systems. During the multi-engine training the applicant will learn operating procedures, systems and performance considerations. The student will also learn to accurately use performance charts and compute weight & balance data to control weight & balance conditions of the multi-engine airplane.

In addition the student will learn principles, techniques, and procedures, which apply to single engine and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: Phase four is complete when the student can demonstrate precise airplane attitude control by instrument reference only. This will include the use of full and partial panel reference. In addition the student will demonstrate accurate use of navigation systems by maintaining positional awareness at all times.

Finally the student has to pass the final stage check with minimum score of 80% .

Note: Pre solo night written test is required.

Integration with theoretical knowledge

TWO HOURS GROUND BRIEFING

At the beginning of phase 4 the instructor will brief the student(s) on the fundamentals of Basic Attitude Instrument flying. The purpose of this brief is to begin to create a foundation and understanding of the basic skills and techniques required to control an aircraft solely by reference to instruments.

CONTENT

- ✓ Radial scanning
- ✓ Pitch plus power equals performance
- ✓ Introduce 6 basic instruments and their purpose (i.e. pitch, bank, and power)
- ✓ Discuss Control and Performance instruments and indications.
- ✓ Discuss three fundamentals of instrument scan. Cross check, interpretation, and aircraft control.
- ✓ Introduce concept of primary and supporting instruments in four phases of flight, straight and level, climbs, descents, and turns including entries and level off procedures.

COMPLETION STANDARDS. The integration will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of basic attitude instrument flying principles.

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 36: VOR Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures VOR Approaches.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGTG approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including DME ARC at LGTG approach
- ✓ Initial Approach to the VOR
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The Inbound Procedure
- ✓ Re-Check of Identification Code and Altimeter Setting

- ✓ The Final Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 37: NDB Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures NDB Approaches.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGSK approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Pre-flight Discussion Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including VOR HOLDING at SKP and approach to LGSK
- ✓ Initial Approach to the NDB
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The NDB Inbound Procedure

- ✓ Re-Check of Identification Code and Altimeter Setting
- ✓ The Final NDB Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a IR x-country flight. To also review to the student the non-precision approaches procedures NDB and VOR Approaches. The student must be prepared for IR flight to LGSK or LGZA or LGKF or LGMK (full stop) and IR departure to LGMG.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Note: The recommended minimum will be completed in more than one sortie

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation), AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 39: Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a x-country flight.

Note 1: The recommended minimum may be completed in more than one sortie

Note 2: In the first flight use the nearest ILS's LGAV (A prior ATC approval is required to be obtained by the instructor for ILS approach without landing), LGTG or LGEL. For the next flights use LGTS without full stop landing (If a full stop landing is performed the student will be charged the landing fees) or LGPZ.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Precision Approach Charts
- ✓ Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ Navaid Requirements, e.g. Radar, ADF, etc.
- ✓ Communication (ATC Liaison and R/T Phraseology)

Review:

- ✓ Holding Procedure
- ✓ The Final Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Completion of Aerodrome Approach Checks
- ✓ Initial Approach Procedure
- ✓ Selection of the ILS Frequency and Identification of Coding
- ✓ Operating Minima
- ✓ Achieving the Horizontal and Vertical Patterns
- ✓ Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix to the
- ✓ Use of DME {as applicable)
- ✓ Go Around arid Missed Approach Procedure
- ✓ Review of the Published Instructions

Flight Lesson Introduce Air Exercise Precision Approach Procedure

- ✓ Initial Approach to the ILS
- ✓ Holding Procedure
- ✓ Frequency Selection and Identification of ILS
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ Communication {ATC Liaison and R/T Phraseology)
- ✓ Determination of Operating Minima and Altimeter Setting
- ✓ ILS Entry Methods
- ✓ Radar Vectors

- ✓ The Descent Rate on Final Approach
- ✓ Maintaining the Localizer and Glide Path
- ✓ Decision Height
- ✓ Missed Approach Procedure

Exercise 40: Long IR X-Country

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a long IR x-country flight. The student must be prepared for IR flight and DME ARC to LGIR and ILS approach to LGRP.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives.

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation)
- ✓ AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials, etc.
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position .Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 41: SPICUS

EXERCISE OBJECTIVE: To further increase student's confidence to flight by reference to instruments on a IR x-country flight prepared by the student without any assistance.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of emergencies
- ✓ Review of communications and ATC clearance
- ✓ Review lesson objectives and establish targets

Flight Lesson Holdings - Precision and Non Precision Approach Procedures

- ✓ Flight Preparation
- ✓ Communications (Departure, En-route and Arrival)
- ✓ En-route awareness and airmanship (i.e. position and ETA estimation)
- ✓ VOR Holding
- ✓ VOR Approaches
- ✓ ILS Approaches
- ✓ NDB Holding
- ✓ NDB Approaches

Exercise 42: Night Rating

EXERCISE OBJECTIVE: To develop the student's ability to make solo night flights in the local practice area and airport traffic pattern. To familiarize the student with such aspects of night operations as: night vision, night orientation, and judgment of distance, use of cockpit lights, position lights, landing lights, and night emergency procedures

COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Night vision and vertigo
- ✓ Orientation in local area
- ✓ Judgment of distance
- ✓ Aircraft lights
- ✓ Airport lights
- ✓ Taxi technique
- ✓ Takeoff and landing technique
- ✓ Collision avoidance
- ✓ Unusual attitude recovery
- ✓ Emergencies

Flight Lesson Dual Basic Night Flying

- ✓ Start up procedures
- ✓ Local procedures -including ATC liaison
- ✓ Taxiing
- ✓ Parking area and taxiway lighting
- ✓ Judgment of speed and distances
- ✓ Use of taxiway lights
- ✓ Avoidance of hazards -obstruction lighting
- ✓ Instrument checks
- ✓ Holding point -lighting procedure
- ✓ Initial familiarization at night
- ✓ Local area orientation
- ✓ Significance of lights on other aircraft
- ✓ Ground obstruction lights
- ✓ Division of piloting effort -external/instrument reference

- ✓ Aerodrome lighting -Approach and runway lighting (including VASI and PAPI)
- ✓ Threshold lights
- ✓ Approach lighting
- ✓ Visual approach slope indicator systems

NIGHT CIRCUITS

- ✓ Line up
- ✓ Visual references during the take-off run
- ✓ Transfer to instruments
- ✓ Establishing the initial climb
- ✓ Use of flight instruments
- ✓ Instrument climb and initial turn
- ✓ The circuit
- ✓ Aeroplane positioning -reference to runway lighting
- ✓ The traffic pattern and lookout
- ✓ Initial approach and runway lighting demonstration
- ✓ Aeroplane positioning
- ✓ Changing aspect of runway lights and VASI (or PAPI). Intercepting the correct approach path
- ✓ Positioning, base leg and final approach
- ✓ Use of landing lights
- ✓ The flare and touchdown
- ✓ The roll out
- ✓ Turning off the runway -control of speed
- ✓ Missed approach. Use of instruments - Re-positioning in the circuit pattern

NIGHT NAVIGATION

- ✓ Particular emphasis on flight planning
- ✓ Selection of ground features visible at night
- ✓ Effect of cockpit lighting on map colours
- ✓ Use of radio aids
- ✓ Effect of moonlight upon visibility at night
- ✓ Emphasis on maintaining a 'minimum safe altitude'
- ✓ Alternate aerodromes -restricted availability
- ✓ Restricted recognition of weather deterioration
- ✓ Lost procedures

NIGHT EMERGENCIES

- ✓ Radio failure
- ✓ Failure of runway lighting
- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
- ✓ Failure of aeroplane navigation lights
- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure

Exercise 50: Introduction to Multi Engine Principles

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on multi-engine aerodynamics, operating procedures, systems, and performance considerations. The applicants will learn to accurately use performance charts and compute weight and balance data to control the weight and balance conditions of the multi-engine airplane. In addition the students will learn principles, techniques, and procedures which apply to engine-out and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: This lesson will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of multi-engine flying principles.

AIR LEGISLATION

- ✓ Aeroplane performance group definitions (JAA)

PRINCIPLES OF FLIGHT-THE PROBLEMS

- ✓ Asymmetry Control
- ✓ Performance
- ✓ failed engine propeller drag
- ✓ Total drag increase
- ✓ Asymmetry of lift
- ✓ Effect of yaw in level and turning flight
- ✓ Thrust and rudder side force couples
- ✓ Effect on moment arms

CONTROL IN ASYMMETRIC POWER FLIGHT

- ✓ Use, misuse and limits of:
  - o Rudder
  - o Aileron
  - o Elevators
- ✓ Effect of bank/sideslip/balance
- ✓ Decrease of aileron/rudder effectiveness
- ✓ foot loads and trimming

MINIMUM CONTROL AND SAFETY SPEEDS

- ✓ Minimum control speed (Vmc)
- ✓ Factors affecting (Vmc)
- ✓ Landing gear
- ✓ Flaps
- ✓ Cowl flaps/cooling gills
- ✓ Pilot reaction/competence
- ✓ banking towards the operating engine
- ✓ feathering

- ✓ Critical engine
- ✓ Take-off safety speed
- ✓ Definition/origin of v2

AEROPLANE PERFORMANCE -ONE ENGINE INOPERATIVE

- ✓ Effect on excess power available
- ✓ Single-engine ceiling
- ✓ cruising, range and endurance acceleration/deceleration
- ✓ zero thrust, definition and purpose

PROPELLERS

- ✓ Variable pitch -general principles
- ✓ Feathering/unfeathering mechanism and limitations

SPECIFIC AEROPLANE TYPE AEROPLANE AND ENGINE SYSTEMS

- ✓ Operation normal.
- ✓ operation abnormal
- ✓ emergency procedures

LIMITATIONS –AIRFRAME

- ✓ load factors
- ✓ Landing gear/flap limiting speeds (Vlo and Vfe)
- ✓ Maximum speeds (Vno and Vne)

Limitations – ENGINE

- ✓ Rpm and manifold pressure
- ✓ Oil temperature and pressure
- ✓ Emergency procedures

MASS AND BALANCE

- ✓ To be covered in conjunction with the flight/owner's manual/pilot's operating handbook}

MASS AND PERFORMANCE

- ✓ (To be covered in conjunction with the flight/owner's manual/pilot's operating handbook) calculations for specific aeroplane type (all engines operating)
- ✓ Take-off run
- ✓ Take-off distance
- ✓ accelerate/stop distance
- ✓ landing distance
- ✓ landing run
- ✓ Take-off/climb out flight path
- ✓ Calculations for specific aeroplane type (one engine operating}
- ✓ landing distance

- ✓ landing run

Exercise 50A: Introduction to Avidyne Entegra Glass Cockpit

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on Avidyne Entegra glass cockpit system. The lesson is based on a CBT course which has been developed by FLIGHT 1 EUROPE LTD in co-operation with Avidyne, and has been designed to familiarize and train the students to efficiently operate the Entegra EXP500 PFD, MFD of the PA-44.

COMPLETION STANDARDS: At the conclusion of each lesson, student comprehension is measured by means of a multiple choice test. During the flight scenarios, the student demonstrates his or her grasp of the material by correctly selecting the appropriate PFD function(s),

INTRODUCTION

- ✓ Course overview
- ✓ Cautions VFR – IFR usage

EXP500 SYSTEM OVERVIEW

OPERATING THE EXP500

FEALURE MODES

Exercise 51: Take-Off and Climb

EXERCISE OBJECTIVE: During the lesson the student will become acquainted with the training airplane. The student should learn the attitudes, power settings, and configurations required for the performance of the listed manoeuvres and procedures using visual references.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations with a minimum of instructor assistance. The applicant will demonstrate the knowledge of attitudes, power settings, and configurations necessary to perform the listed manoeuvres and procedures by maintaining Altitude ± 200 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing

- ✓ Pre- Taxiing area precautions
- ✓ Greater mass -greater inertia
- ✓ Effect of differential power
- ✓ Precautions on narrow taxiways

PRE TAKE-OFF PROCEDURES

- ✓ Engine power checks
- ✓ Pre take-off checks c instructor's briefing to cover the procedure - to be followed should an emergency occur during take-off, e.g. engine failure

THE TAKE-OFF AND INITIAL CLIMB

- ✓ Factors affecting the length of the take-off run/distance
- ✓ Correct lift-off speed
- ✓ Importance of safety speed
- ✓ Crosswind take-off, considerations and procedures
- ✓ Short field take-off, considerations and procedures
- ✓ Engine handling after take-off, throttle/pitch/engine synchronization

CLIMBING

- ✓ Airmanship considerations
- ✓ Pre-climbing checks
- ✓ Engine considerations
- ✓ Use of throttle/pitch controls
- ✓ Maximum rate of climb speed
- ✓ Maximum angle of climb speed
- ✓ Synchronizing the engines

Exercise 52: Straight and Level Flight - Descend

EXERCISE OBJECTIVE: During this lesson, the student will review manoeuvres from the previous lesson. The student will be introduced to stalls, slow flight, steep turns and emergency operations to become familiar with the flight characteristics of the multi-engine aircraft.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations without instructor assistance. During take off and landing, the applicant will demonstrate good directional control and maintain lift off, climb, approach, and touchdown airspeed ±10 knots of the correct speed. Straight and level flight, climbs, and descends will be performed while maintaining assigned airspeed ±10 knots, roll-outs from turns ± 10º of assigned heading, and specified altitude ± 150 feet. The student will be able to demonstrate the correct flight procedures for manoeuvring during slow flight, steep turns, emergency descends, and the correct entry and recovery procedures for stalls. Slow flight manoeuvres and stalls must be completed no lower than 3,000 feet AGL or the manufacturers recommended altitude, whichever is higher.

STRAIGHT AND LEVEL FLIGHT

- ✓ Selections of power -throttle/pitch controls and Engine synchronization
- ✓ Fuel consumption aspects
- ✓ Use of trimming controls
- ✓ Operation of flaps (effect on pitch attitude, effect on airspeed)
- ✓ Operation of landing gear (effect on pitch attitude, effect on airspeed)
- ✓ Use of mixture controls
- ✓ Use of alternate air/carburetor heat controls
- ✓ Operation of cowl flaps/cooling gills
- ✓ Use of cabin ventilation and heating systems

DESCENDING

- ✓ Pre-descent checks
- ✓ Selection of throttle/pitch controls
- ✓ Engine cooling considerations

TURNING

- ✓ Medium turns
- ✓ Climbing/descending
- ✓ Steep turns (45 degrees of bank or more)

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine
- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse
- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine

- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

Exercise 55: IR – Multi Engine Piston - Emergencies

EXERCISE OBJECTIVE: REVIEW ALL IR ASPECTS. During this session, the student will review procedures and manoeuvres that require additional practice from the prior single engine IR lessons. The student should gain additional proficiency in instrument flight operations during a planned cross-country flight. The applicant will be introduced to engine-out manoeuvres and procedures during simulated instrument flight.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: At the completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight and level flight. The student will demonstrate the newly introduced manoeuvres and procedures using correct operating techniques, coordination, smoothness, and understanding. During engine-out operations, the applicant will be able to make decisions concerning the continued safety of the flight and readily identify the inoperative engine and likely problems. The applicant will exhibit proficiency to engine-out manoeuvres and procedures during simulated instrument flight

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson Review

- ✓ Engine failure during ALL engines approach or missed approach

Instrument flying on asymmetric power

- ✓ Flight instrument checks and services available
- ✓ Straight and level flight
- ✓ Climbing and descending
- ✓ Standard rate turns
- ✓ Level, climbing and descending turns including turns onto pre selected headings
- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV (use SKP – LGSK and TGG - LGTG)
- ✓ Procedure Turns
- ✓ Holding Procedures
- ✓ Engine failure during approach

Exercise 60 FINAL CHECK

EXERCISE OBJECTIVE: The chief instructor, assistant chief, or a designated check instructor will evaluate the student's skills. This is the final stage test in preparation for the CPL/IR(A) skill test. The review items may be performed with all engines operating or with one engine inoperative.

COMPLETION STANDARDS: The student will perform all VFR, IFR, and pertinent simulated emergency procedures at the proficiency level, as outlined in Appendix 2 to JAR-FCL 1.170 (CPL/IR (A) skill test).

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Use of flight manual
- ✓ Preparation of ATC flight plan. IFR flight plan/log

PRE-FLIGHT OPERATIONS AND DEPARTURE

- ✓ Use of checklist, airmanship, anti/de-icing procedures, etc., apply in all sections of the stage check
- ✓ Pre-flight inspection
- ✓ Weather Minima
- ✓ Taxiing
- ✓ Pre-take off briefing. Take off
- ✓ Transition to instrument flight
- ✓ Instrument departure procedures. Altimeter setting
- ✓ ATC liaison -compliance. R/T procedures

GENERAL HANDLING

- ✓ Control of the aeroplane by reference solely to instruments. Including:
- ✓ level flight at various speeds, trim
- ✓ Climbing and descending turns with sustained Rate 1 turn
- ✓ Recoveries from unusual attitudes. including sustained 45° bank turns and steep descending turns
- ✓ Recovery from approach to stall in level flight.
- ✓ Climbing/descending turns and in landing configuration
- ✓ Limited panel, stabilized climb or descents at Rate 1 turn onto given headings.
- ✓ Recovery from unusual attitudes.

EN-ROUTE IFR PROCEDURES

- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV
- ✓ Use of radio aids
- ✓ Level flight, control of heading, altitude and airspeed, power setting, trim technique

- ✓ Altimeter settings
- ✓ Timing and revision of ETAs (En-route hold -if required)
- ✓ Monitoring of flight progress, flight log, fuel usage, systems management
- ✓ ATC liaison and compliance. R/T procedures

APPROACH PROCEDURES

- ✓ Setting and checking of navigational aids, identification of facilities
- ✓ Arrival procedures, altimeter checks
- ✓ Approach and landing briefing, including descent/approach/landing checks
- ✓ Holding procedure
- ✓ Compliance with published approach procedure
- ✓ Altitude, speed heading control, (stabilized approach)
- ✓ Go-around action
- ✓ Missed approach procedure I landing
- ✓ ATC liaison -compliance, R/T procedures

Simulated asymmetric flight

- ✓ Simulated engine failure after take-off or on go-around]
- ✓ Asymmetric approach and procedural go-around
- ✓ Asymmetric approach and landing, missed approach procedure

2.1.6 PHASE 5 – IR AND MULTI-ENGINE TRAINING

The aim of this course syllabus is to develop a pilot's non-technical skills for working in a multicrew environment, in order safely to operate commercial air transport aeroplanes under IFR conditions.

Objectives: After completing this course students should:

- ✓ Have a heightened awareness of the significance of decision making, communications,a division of tasks, use of checklists, mutual supervision and mutual support, as they relate to typical commercial air transport envirinment, in normal, abnormal and emergency situations.
- ✓ Have a greater awareness of their own personal style of leadership/followership and the way in which it will foster greater crew effectiveness.
- ✓ Have a greater awareness of how behaviour in normal situations powerfully impacts on crew functioning in high workload/stressful situations.
- ✓ Have a heightened awareness of the different hardware and liveware interfaces which exist in the multi-crew environment.
- ✓ Have better awareness of how to make best use of crew co-operation techniques.

PURPOSE: The purpose of carrying out multi-crew co-operation training is:

- ✓ To ensure that when operating in a multi-crew environment, the Pilot in Command fulfils management and decision making functions irrespective of being pilot flying (PF) or pilot non-flying (PNF),
- ✓ To ensure that PF and PNF tasks are clearly specified such that the pilot flying can direct his/her full attention to handling and controlling the aeroplane.
- ✓ To ensure that co-operation is effected in an orderly way.
- ✓ To ensure mutual supervision, information and support between crew members at all times.

POLICIES, PROCEDURES & ADMINISTRATION: Each course is organised by the CGI & CFI of Global Air Services with the cooperation of Olympic Aviation Training Academy (GR-FTO-001) and/or Flugschule Berlin FSB (D-TRTO-1.013).

Course progress is monitored by the HoT of Global Air Services in conjunction with the course instructor(s).

Equipment and Resources: The multi crew cooperation flying course in Global Air Services shall comprise a total of at least 20 hours in an FNPT II and the exercises shall be accomplished using the simulated commercial environment of a B-737-200 STD located at the Olympic Aviation Training Academy or a ELITE FNPT II MCC Be200/D-3A-063B located in EDAZ (Flugplatz Schonhagen, 14959 Schonhagen, Germany).

The B-737-200 STD, is approved according to the qualification certificate HCAA no. HR-1A-03, and will be used for the MCC course according to the contract signed between Global Air Services and Olympic Aviation Training Academy (GR-FTO-001).

The ELITE FNPT II MCC Be200/D-3A-063B, is approved by LUFTFAHRT - BUNDESAMT BUNDESREPUBLIK DEUTSCHLAND, accepted by HCAA Document ref nr. D2/B/13371/2-10-2008 and will be used for the MCC course according to the contract signed between Global Air Services and Flugschule Berlin FSB (D-TRTO-1.013).

Course Completion Certificate: Progress through the course is recorded on the MCC Trainee Progress Record by the MCC instructor/lecturer. Upon successful completion of the

course each student is awarded a course completion certificate, issued by the Head of Training.

METHODS: The course is divided into two parts, classroom and simulator work. In both sections, students can expect:

- ✓ to be taught basic skills to help them to function as effective team members
- ✓ to learn and practise skills necessary to become effective flight crew members
- ✓ to be exercised in the role of both Pilot Flying and Pilot Non-Flying

Pre-class Preparation: In order to get the maximum benefit from the time allocated to this course, it is important that students adequately prepare for each lecture as set out in this syllabus. Each lecture prescribes "required reading" with which students should have familiarised themselves prior to the lecture.The lecture will concentrate on drawing out how the content of the "required reading" material actually relates to MCC in a normal working environment. The lecture is not a passive forum to go through the line by line details of the "required reading" material.

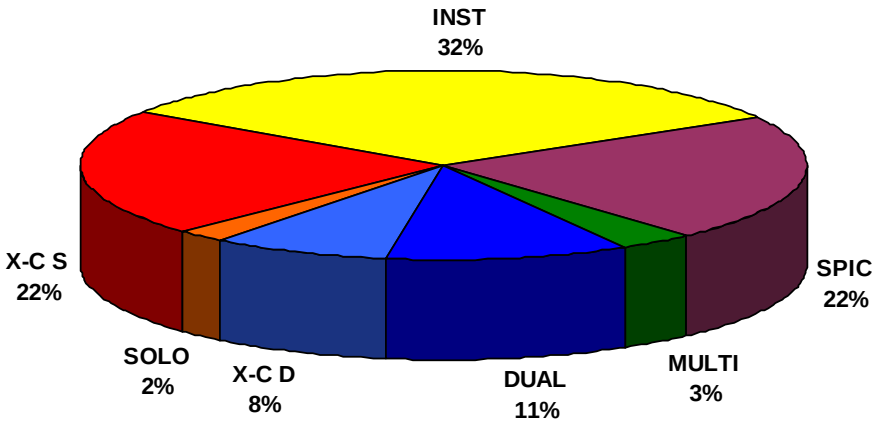
Presentation: Where possible, the MCC instructor should endeavour to make each classroom lecture as interactive as possible. This can be achieved by use of role-play for both the instructor and students. The theoretical material being presented in the lectures should be illustrated by means of examples which can and do occur in normal line flight operations. Specifically, "Human Factors in Multi-Crew Flight Operations" can be used as potential source material for many of these interactive exercises.

Simulator Exercises: The emphasis during each simulator session is on practising the practical aspects of MCC covered in the classroom sessions. It is not an assessment of how well the students demonstrate their ability to handle the aeroplane, its systems and associated failures. The simulator should be viewed as a means towards the required end of raising the students' MCC awareness - it is not an end in itself. Each exercise should be allowed to develop as it would in the normal conversion course but the instructional inputs should emphasise the MCC issues arising from each exercise. Each session lasts three to four hours. Each student should be exercised in the role of PF and PNF for one hour. For the purpose of the exercise and to draw out certain MCC issues, one student should be designated to act as PIC for each half of the session. There is no requirement for each student to cover the same material in the role of PIC. It is therefore possible to divide the simulator exercises equally between the students without need for repetition

2.2 CPL/IR(A) Integrated Course

2.2.1 Course Structure

The flying training of CPL/IR(A) is divided into Four (4) phases and the air exersices devided between the phases as anylized in the following table:



PHASE 1	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1: Aircraft Familiarization and Preparation for Flight								2
Exercise 2: Preparation for and action after flight								2
Exercise 3: Air experience	1							
Exercise 4: Effects of controls – Attitudes and Movements	1							
Exercise 5: Taxiing and Ground Emmergencies	1							
Exercise 6: Straight and Level Flight	1							
Exercise 7: Climbing	1							
Exercise 8: Descending	1							
Exercise 9: Turning	1							
Exercise 10A: Slow Flight	1							
Exercise 10B: Stalls	1							
Exercise 11: Spin avoidance	1							
Exercise 12: Take-off and climb to downwind position	1,5							
Exercise 13: Circuit approach and landing	2							
Exercise 13E: Emergencies	1,5							
Exercise 14: Stage Check 1st SOLO	1	0,5						
	16	0,5	0	0	0	0	0	4
PHASE 2								
Exercise 16: Forced landing without power	2	1,5						
Exercise 17: Precautionary landing	2	1,5						
Exercise 18A: Introduction to Navigation			1					
Exercise 18B Navigation problems at lower levels and in reduced visibility			1					
Exercise 18C Radio navigation			2					
Exercise 19 Introduction to Instrument Flight					1			
Exercise 20 Local Area SOLO				3				
Exercise 19A: Basic Instruments – Pattern “A”					1			
Exercise 19b: Basic Instruments – Pattern “B”					1			
Exercise 21: Advancing to Navigation			4					
Exercise 25: X-Country SOLO				6				
Exercise 26 DUAL X-Country Triangle			7					
Exercise 27 SOLO X-Country Triangle 150 NM				6				
	4	3	15	15	3	0	0	0

PHASE 3								
Exercise 28 SOLO Long X-Country Preparation				20				
Exercise 29 SOLO X-Country Triangle 300 NM				5				
	0	0	0	25	0	0	0	0
PHASE 4 – IR								
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					2			
Exercise 31: Unusual Attitudes and Recovery					1			
Exercise 32 Use of Partial Panel					3			
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					3			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					2			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					2			
Exercise 36: VOR Non - Precision Approach Procedure					5			
Exercise 37: NDB Non - Precision Approach Procedure					5			
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures					9			
Exercise 39: Precision Approach Procedure					6			
Exercise 40: Long IR X-Country					9,5			
Exercise 41: SPICUS						40		
Exercise 42: Night Rating		0,5			4,5			
	0	0,5	0	0	52	40	0	0
PHASE 4 - MULTI-ENGINE TRAINING								
Exercise 50: Introduction to Multi Engine Principles								6
Exercise 51: Take-Off and Climb							1	
Exercise 52: Straight and Level Flight - Descend							1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure							2	
Exercise 54: ASYMMETRIC POWER FLIGHT “Take-Off and Approach”							2	
Exercise 55: IR – Multi Engine Piston - Emmergencies					5			
	0	0	0	0	5	0	6	6
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**20**	**4**	**15**	**40**	**60**	**40**	**6**	**10**

2.2.2 PHASE 1

OBJECTIVE: During this phase the student shall do exercises up to the first solo flight comprised a total of at least 15 hours dual flight instruction on a single engine aircraft.

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Training Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Organization Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Flight Training Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 3: Air experience

EXERCISE OBJECTIVE: The student will become familiar with the training airplane, its operating characteristics, flight controls, basic instruments and systems, pre-flight procedures, proper use of the checklist, and general good operating techniques and safety procedures. Instruction will be given in manoeuvring the airplane on the ground and in basic flight manoeuvres using the horizon (no the attitude indicator. Instructor must demonstrate all manoeuvres initially hiding ASI, VSI, etc). In flight training, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon. As basic flying skills are developed through training and experience, the pilot will acquire an awareness of these references.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the training airplane and safe operating techniques should be demonstrated.

Note: The notation (VR/IR) will be used throughout this syllabus to indicate the use of integrated instruction. Each new manoeuvre will be introduced by visual reference (VR) and attitude instrument reference (IR)

Flight Lesson

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Performing pre-flight line inspection to include required aircraft documents
- ✓ Correct use of the checklist
- ✓ Engine start and engine controls
- ✓ Radio communications on the ground and in flight
- ✓ Taxi -speed and directional control including use of brakes
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal takeoff
- ✓ Traffic pattern departure
- ✓ Local area familiarization which may include short point to point flight
- ✓ Straight and level flight (VR)
- ✓ Trim technique
- ✓ Medium banked turns (VR) and how to clear for traffic before turning
- ✓ Climbs (VR)
- ✓ Glides (VR)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane

Exercise 4: Effects of controls – Attitudes and Movements

EXERCISE OBJECTIVE: The student will become familiar with the controls of the aircraft and the effect of them during flight. Again, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be demonstrated.

Flight Lesson

- ✓ Primary effects when laterally level and when banked using the aileron and the rudder
- ✓ Effects of Airspeed and Power using the elevator during climb descend.
- ✓ Trimming controls (Nose attitude and then trim for straight and level, climb and descend)
- ✓ Flaps. Effects of Nose Attitude, Airspeed and Power
- ✓ Operation of Mixture control, Carburetor heat, Cabin heating/ventilation

Exercise 5: Taxiing and Ground Emergencies

EXERCISE OBJECTIVE: The student will be familiar with taxiing procedures normal and emergencies also with the aircraft parking area of the Global Air Services.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, without assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to taxi for take off and to the parking area after landing. The student shall be able to secure the airplane and fill the appropriate documents (tech log etc) by himself.

Flight Lesson

- ✓ Pre-taxi checks
- ✓ Starting, control of speed and stopping
- ✓ Engine handling
- ✓ Control of direction and turning
- ✓ Turning in confined spaces
- ✓ Parking area procedure and precautions
- ✓ Effects of wind and use of flying controls
- ✓ Effects of ground surface
- ✓ Freedom of rudder movement
- ✓ Marshalling signals
- ✓ Instrument checks
- ✓ Air traffic control procedures
- ✓ Emergencies
    - o Brake and steering failure

During the flight further training of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be given according to objectives of the Exercise 4 including demonstration of:

- ✓ Shallow turns
- ✓ Medium turns
- ✓ Steep turns
- ✓ Climb
- ✓ Descend
- ✓ Glides

Exercise 6: Straight and Level Flight

EXERCISE OBJECTIVE: The student will review and practice the four fundamentals forces of flight. Also, the student will be introduced further to climbing and throttle control, rudder control, and level off procedures. The student will perform communications, taxi and take-of rolls. Aircraft stability will be demonstrated to instil confidence and stress the importance of proper trim.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with no assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis performing climbs, descends and shallow – medium turns. A general understanding of the traffic pattern and landings techniques should be demonstrated.

Pre-flight Discussion and Briefing

(The pre-flight briefing will be performed by the student with the instructor assistance)

- ✓ Current and forecast weather/Notams
- ✓ Performance planning/weight and balance
- ✓ The Forces
- ✓ Longitudinal Stability and Control in Pitch
- ✓ Relationship of C of G to Control in Pitch
- ✓ Lateral and Directional Stability (Control of Lateral Level and Balance)
- ✓ Attitude and Balance Control Trimming
- ✓ Power Settings and Airspeeds
- ✓ Drag and Power Curves
- ✓ Range and Endurance

Flight Lesson

- ✓ Normal takeoff (performed by the student assisted by the instructor)
- ✓ Traffic pattern departure
- ✓ Normal climb (performed by the student assisted by the instructor)
- ✓ Straight and level at normal cruising power, attaining and maintaining straight and level flight (performed by the student without any assistance)
- ✓ Medium and steep turns (performed by the student assisted by the instructor)
- ✓ Glides (performed by the student assisted by the instructor)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane (performed by the student without any assistance)

Exercise 7: Climbing

EXERCISE OBJECTIVE: The student will review and practice the fundamentals of climb, turns, descend, glide, and turns in order to increase proficiency. The student also will perform takeoff assisted by the instructor.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to conduct all pre-flight operations and establish proper pitch attitude and power for climbs without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of the relationship between Power/Airspeed and Rate of Climb
- ✓ Maximum Rate of Climb (Vy) and Maximum Angle of Climb (Vx) (Effect of: Mass, Flaps and density Altitude)

Flight Lesson

- ✓ Use of checklist (performed by the students without any help)
- ✓ Pre-flight checks and engine start (performed by the students without any help)
- ✓ Radio communications (performed by the students without any help)
- ✓ Taxi (performed by the students without any help)
- ✓ Pre-takeoff checks (run-up) (performed by the students without any help)
- ✓ Normal takeoff (performed by the students without any help)
- ✓ Traffic pattern departure and entry (performed by the students assisted by the instructor)
- ✓ Straight and level (performed by the students without any help)
- ✓ Climbing (performed by the students without any help)
    - o Entry, maintaining the normal and max rate climb
    - o levelling off
    - o levelling off at selected altitudes
    - o Control in pitch, including use of trim
    - o En-route climb (cruise climb)
    - o climbing with flap down
    - o Maximum angle of climb
    - o Introduction to Slow Flight (ΒΑΠΕ – ΒΑΠΕ)
- ✓ Glides (performed by the students assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 8: Descending

EXERCISE OBJECTIVE: The student will demonstrate his ability to perform climbs and turns. The instructor will review descends and glides in order to increase student's proficiency. Also, the student will be introduced to combine rudder control and ailerons during S-turns (συνδυασμός πηδαλίων). A demonstration to slow flight (ΒΑΠΕ-ΒΑΠΕ) also will be repeated

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to perform without any assistance and establish proper pitch attitude and power for descends and glides. The student also will be able to perform Slow Flights and S-turns with the instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams (Performed by the student)
- ✓ Review performance planning/weight and balance (Performed by the student)
- ✓ Glide Descent Angle -Airspeed -Rate of Descent (Performed by the student)
- ✓ Effect of Flaps (Performed by the student)
- ✓ Effect of Wind (Performed by the student)
- ✓ Effect of Mass (Performed by the student)

Flight Lesson

- ✓ Use of checklist (Performed by the student)
- ✓ Pre-flight checks and engine start (Performed by the student)
- ✓ Radio communications (Performed by the student)
- ✓ Taxi (Performed by the student)
- ✓ Pre-takeoff checks (run-up) (Performed by the student)
- ✓ Normal takeoff (Performed by the student)
- ✓ Traffic pattern departure and entry (Performed by the student)
- ✓ Straight and level (Performed by the student)
- ✓ Climbs (Performed by the student)
- ✓ Descends and Glides (Performed by the student assisted by the instructor)
    - o Entry, maintaining and levelling off
    - o Levelling off at selected altitudes
    - o Glides
- ✓ Slow Flight (ΒΑΠΕ – ΒΑΠΕ) (Performed by the student assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 9: Turning

EXERCISE OBJECTIVE: The student will review and practice climb, descends and glide turns, to increase proficiency. Also, the student will review S-turns. The student will perform taxi and takeoff.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to establish proper pitch attitude and power for turns (climbing and descending) without instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Climbing and Descending Turns
- ✓ Turning onto Selected Headings -Use of Gyro Heading Indicator and Magnetic Compass

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)

Flight Lesson (Introduce) Air Exercise 9 Turning

- ✓ Entry and maintaining medium level turns
- ✓ Climbing turns
- ✓ Descending turns
- ✓ Turns onto selected headings, use of gyro heading indicator and compass
- ✓ Entry and maintaining steep turns

Exercise 10A: Slow Flight

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student will be expected to control airspeed in all manoeuvres within ± 10 kts, heading within 10° and ± 50 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius
- ✓ Airmanship using flaps at low airspeeds

- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 10B: Stalls

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce stalls.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Stall recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Characteristics of the Stall
- ✓ Angle of Attack
- ✓ The Effectiveness of the Controls at the Stall
- ✓ Factors Affecting the Stalling Speed:
    - o Effect of Flaps/Slats/Slots
    - o Effect of Power/Mass/C of G/Load Factor
    - o The Effects of Unbalance at the Stall
- ✓ The Symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Stalling & Recovery:
- ✓ Without Power
- ✓ With Power On
- ✓ With Flaps Down
- ✓ Stalling and Recovery at the Incipient Stage with 'Instructor Induced' Distractions

* Stalling & Recovery during manoeuvres involving more than 1 G (accelerated stalls, including, secondary stalls & recoveries). Consideration is to be given to manoeuvre limitations and references to The Owners/Flight manual or Pilot's Operating Handbook must also be made in relation to Mass and Balance limitations. These factors must also be covered in the next exercise spinning.

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level

- ✓ Climbs
- ✓ Descends
- ✓ Medium & steep turns
- ✓ Slow Flight

Flight Lesson (Introduce) Air Exercise 10 B Stalling

- ✓ Airmanship
- ✓ Safety checks (1A 5E)
- ✓ The symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Recovery without Power
- ✓ Recovery with Power
- ✓ Recovery when a Wing Drops at the Stall
- ✓ Stalling with Power 'ON' & Recovery
- ✓ Stalling with Flap 'Down' & Recovery
- ✓ Stalling with Power 'OFF' & Recovery
- ✓ Repetitive Stall

Exercise 11: Spin avoidance

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce spins.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Spin recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ SPIN RECOVERY at the INCIPIENT STAGE
- ✓ Causes, Stages, Autorotation and Characteristics of the Spin
- ✓ Recognition and Recovery at the Incipient Stage -entered from various flight attitudes Aeroplane
- ✓ Limitations
- ✓ Airmanship -Safety Checks
- ✓ SPIN RECOVERY at the DEVELOPED STAGE
- ✓ The Spin Entry
    - o Recognition & Identification of Spin Direction
    - o The Spin Recovery
    - o Use of Controls
    - o Effects of Power/Flaps (flap restriction applicable to type)
    - o Effect of the C of G upon spinning characteristics
    - o Spinning from Various Flight Attitudes
    - o Aeroplane Limitations
    - o Airmanship -Safety Checks
    - o Common Errors during Recovery

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 11A/ B Sinning

AIR EXERCISE 11 A SPIN RECOVERY at the INCIPIENT STAGE

- ✓ Aeroplane Limitations.
- ✓ Airmanship
- ✓ Safety Checks

- ✓ Recognition at the Incipient Stage of a Spin
- ✓ Recoveries from Incipient Spins entered from various attitudes with the Aeroplane in the Clean

AIR EXERCISE 11 B SPIN RECOVERY at the DEVELOPED STAGE - Aeroplane Limitations

- ✓ The Spin Entry
- ✓ Recognition & Identification of the Spin Direction the Spin
- ✓ Recovery (reference to Flight Manual)
- ✓ Effects of Power/Flaps (restrictions applicable to aeroplane type)

NOTE: Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.

Exercise 12: Take-off and climb to downwind position

EXERCISE OBJECTIVE: In addition to providing a review of manoeuvres previously presented, the student will be introduced to different climb and descent configurations and how to transition from one to the other. Loss of engine power emergency procedures during takeoff and climb out will also be introduced.

COMPLETION STANDARDS: The student should display, through performance and discussion, complete understanding of possible emergencies and procedures to use during takeoff. The student shall maintain airspeeds with increased awareness of impending stalls and positive coordinated control usage becoming more consistent. Configuration changes shall be accomplished with correct usage of throttle control and trim technique. Principles of aircraft control during landing should be understood.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Handling- Factors affecting the length of Take-off Run and Initial Climb
    - o The Correct Lift Off Speed, use of Elevators (Safeguarding the Nose Wheel), Rudder and Power
    - o Effect of Wind (including Crosswind Component)
    - o Effect of Flaps (including the Decision to Use and the Amount Permitted)
    - o Effect of Ground Surface and Gradient upon the Take-off Run
    - o Effect of Mass, Altitude and Temperature on Take-off and climb Performance
    - o Pre Take-Off Checks
    - o Air Traffic Control Procedure (before Take-Off)
    - o Drills, during and after Take-off
    - o Short/Soft Field Take-Off Considerations/Procedures
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Airmanship and Air Traffic Control Procedures

Flight Lesson (Review)

- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 12 Take-off and landing to downwind position

- ✓ Pre Take-Off Checks
- ✓ Into Wind Take-Off
- ✓ Crosswind Take-Off
- ✓ Drills During and After Take-Off

- ✓ Short Take-Off and Soft Field Procedure/Techniques (including Performance Calculations)

Exercise 13: Circuit approach and landing

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 13E: Emergencies

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce procedures to employ during partial or complete loss of power while on any leg of the traffic pattern.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing (unassisted). Safe control of approach and landing following simulated loss of power on downwind will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Wake Turbulence Awareness
    - o Wind shear Awareness
    - o Airmanship and Air Traffic Control Procedures
    - o Mislanding/Go around
    - o Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Emergencies

- ✓ Aborted Take-Off
- ✓ Engine Failure after Take-Off
- ✓ Glide Approach (High Altitude Engine Failure and Emergency Landing)
- ✓ Miss-landing/go-around

Exercise 14: Stage Check 1st SOLO

EXERCISE OBJECTIVE: The objective of this flight is to determine if the student possesses a working knowledge of regulations and safe operating procedures, as well as the competency to pilot an aircraft in solo flight.

COMPLETION STANDARDS: The student shall demonstrate the knowledge and skill to perform the listed manoeuvres and procedures and for continued solo flight in the local training area. The following standards will apply:

- ✓ Hold attitude to within ±200 feet of assigned
- ✓ Hold heading to within ±15° of assigned
- ✓ Maintain airspeed to within ±10 kts of desired
- ✓ Recognition of stalls with prompt, positive recovery
- ✓ Safe traffic patterns exercising collision avoidance techniques
- ✓ Demonstrate the ability to execute safe takeoff and landings
- ✓ Safely handle emergency situations presented with no loss of control

Pre-flight Discussion and Briefing - Oral Examination

- ✓ Test knowledge of aircraft
- ✓ Test knowledge of JAR-FCL flight rules which are pertinent to student solo flights
- ✓ Test knowledge and awareness of good operating practices

Stage Check Flight Test

- ✓ Extensive pre-flight, engine start and run-up
- ✓ Taxiing
- ✓ Normal/crosswind takeoff and departure
- ✓ Turns
- ✓ Climbs
- ✓ Glides
- ✓ Slow flight
- ✓ Stall -power off
- ✓ Stall -power on
- ✓ Collision avoidance procedures
- ✓ Traffic pattern operations
- ✓ Normal/crosswind approach and landing
- ✓ Simulated loss of engine power shortly after takeoff and while on downwind
- ✓ Use of Checklist
- ✓ Parking
- ✓ Engine shut down and securing airplane

2.2.3 PHASE 2

OBJECTIVE: During this phase the student shall do exercises up to the first solo cross-country flight comprise a total of at least 15 hours of dual flight instruction and at least 20 hours solo flight on a single-engine aeroplane.

Exercise 16: Forced landing without power

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18A: Introduction to Navigation

EXERCISE OBJECTIVE: To re-familiarize the student with the local practice area and to improve proficiency with more advanced manoeuvres in preparation for local area solo practice flights. The student will be instructed in the planning and conducting of cross-country flights using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o map selection and preparation, choice of route, controlled airspace
    - o danger, prohibited and restricted areas, safety altitudes
    - o calculations, magnetic heading(s) and time(s) en-route, fuel consumption
    - o mass and balance, mass and performance
    - o flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
    - o aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
    - o Departure
    - o organisation of cockpit workload
    - o departure procedures
    - o altimeter settings
    - o ATC liaison in controlled/regulated airspace
    - o setting heading procedure
    - o noting of ETAs
    - o maintenance of altitude and heading
    - o revisions of ETA and heading
    - o log keeping
    - o use of radio, use of navaids
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o transiting controlled/regulated airspace
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ departure procedures, altimeter settings
- ✓ ATC liaison in controlled/regulated airspace
- ✓ setting heading procedure, noting of ETAs, maintenance of altitude and heading
- ✓ revisions of ETA and heading
- ✓ log keeping
- ✓ use of radio, use of navaids
- ✓ minimum weather conditions for continuation of flight, in-flight decisions
- ✓ diversion procedures
- ✓ uncertainty of position procedure
- ✓ lost procedure
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o altimeter setting
    - o entering the traffic pattern
    - o circuit procedures

Exercise 18B Navigation problems at lower levels and in reduced visibility

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce navigation problems at lower levels and in reduced visibility.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing. Safe control of aircraft and correct decision making at lower levels and in reduced visibility will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o actions prior to descending
    - o hazards (e.g. obstacles, and terrain)
    - o difficulties of map reading
    - o effects of wind and turbulence
    - o avoidance of noise sensitive areas
    - o joining the circuit
    - o bad weather circuit and landing

Flight Lesson (Review)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Navigation problems at lower levels and in reduced visibility
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Actions Prior to Descending
    - o Effects of Wind and Turbulence

- Hazards of operating at low levels
- Low Cloud and Good Visibility
- Low Cloud and Poor Visibility
- Avoidance of Moderate to Heavy Rain Showers
- Effects of precipitation (forward visibility)
- bad weather circuit and landing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight

- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 20 Local Area SOLO

EXERCISE OBJECTIVE: To develop student's confidence and proficiency through area solo practice of assigned manoeuvres

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: First area solo: The instructor must be on the tower in order to supervise the take-off, land and student's communications. The flight will be performed at the DAPORI – AIGINA area or LGMG – ALEPOCHORI - ALKYON.

Pre-flight Discussion and Briefing

- ✓ Pre X-Country Solo written test passed
- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson Area solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (with the minimum assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
- ✓ departure procedures
- ✓ ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19b: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 21: Advancing to Navigation

EXERCISE OBJECTIVE: To re-familiarize with dispatch procedures, pre-flight planning, post flight requirements, and to the student's proficiency in cross-country planning procedures. The student must be prepared in order to conduct a cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment. A very good review also in the emergency landings and emergency procedures will be performed in order to develop the ability to take proper action in emergency situations.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: The flight will be performed at the IKAROS - KOPAIDA area. Forced – emergency landings will be performed at IKAROS or KOPAIDA and returning on the airport (Megara) at 2500 to 3500 feet.

Note 3: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (with minimum assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student is able to determine position (with assistance) in the practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern. The student also must be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course making the appropriate radio communications. The student should be competent in navigating by means of pilotage, dead reckoning, VOR, and / or ADF, and when so instructed, is able to accurately plan and fly a diversion to an alternate airport. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure".

Note 3: The student has to be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should also be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Selection of forced landing areas
    - o Provision for change of plan
    - o Gliding distance -consideration
    - o Planning the descent Key positions
    - o Engine failure checks

- Use of radio -R/T 'Distress' Procedure
- The base leg
- The final approach
- Go around
- The landing considerations
- Actions after landing -Aeroplane security
- Causes of engine failure

✓ Advancing to QDM Meaning and Use (VOR/ADF)

Considerations are to be given to airplane performance, Mass & Balance and NAV Log calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

✓ Normal / crosswind takeoff and landing
✓ Short/Soft field takeoff and landing
✓ Traffic pattern departure and entry
✓ Compass turns
✓ NDB & VOR Homing
✓ Position determination on the map using VOR & NDB
✓ Dead reckoning pilotage
✓ Forced Landing Procedures
✓ Selection of Landing Area
✓ Gliding Distance Considerations
✓ Planning the descent:
- Key Positions
- Engine Failure Checks
- Engine cooling precautions

✓ Use of Radio
✓ The Base Leg
✓ The Final Approach
✓ The Landing } When the Exercise is
Actions after Landing } conducted at an
Aeroplane Security } Aerodrome
✓ Airmanship

Exercise 25: X-Country SOLO

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two hours day cross-country flight. The student must be well prepared in order to conduct a SOLO cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG or LGMG – ALEPOCHORI – GERMI – LARIMNA - MANTOUDI – SKIATHOS and reverse route or LGMG – DAPORI – KOR – IXONI – RIO- MESSI – RIO - IXONI – KOR – DAPORI or LGMG – DAPORI – EGN – YDRA – LGPH – YDRA – EGN - DAPORI.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep time using map time-lines and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Opening and closing VFR flight plan, Procedure at unfamiliar airports
- ✓ Emergencies, Pre X-Country Solo written test passed
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson X-Country solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (without any assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
    - o departure procedures
    - o ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace

- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 26 DUAL X-Country Triangle

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 2-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. To introduce to the student the VFR routes.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

Note 2: The Student must be prepared for the following X-Country:

- ⇒ LGMG – ALEPOCHORI – GERMI – LARIMNA – AIDIPSOS – LGBL. LGBL – LGSK. LGSK – MADOUDI – PSACHNA – CHALKIS – OROPOS – MALAKASA – LIMNI – OAKA – XOLARGOS – LGAT – EGN – LGMG.
- ⇒ LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG OR LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG.
- ⇒ LGMG – DAPORI – KOR – IXONI – ARA – LGZA, LGZA – LGKF – MESSI – RIO – IXONI – KOR – DAPORI - LGMG

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure". The student must also be able to execute promptly and safely and without any hesitation emergency procedures like engine failure, electrical load failure, smoke and fire etc.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of lessons 18A, 18B, 18C

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)

Flight Lesson (Introduce) Air Exercise Radio Navigation

- ✓ Use of VHF Omni Range (USE SKOPELOS, ALMIROS,TANAGRA or ARA, DDM, KEA, ATV)
- ✓ Availability, AIP, frequencies

- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)
- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies (USE LGSK and EGN)
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

Exercise 27 SOLO X-Country Triangle 150 NM

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two and half hours day cross-country flight with landings at two unfamiliar airports. To improve the student's proficiency in navigating by means of pilotage, dead reckoning, VOR, and / or ADF; and to further increase the student's confidence and ability to properly handle unexpected flight situations.. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at different airpots as in exercise 26 instructed.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course, Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedure at unfamiliar airports
- ✓ Emergencies

2.2.4 PHASE 3

OBJECTIVE: During phase 3 the student will review previous manoeuvres from phases 1 & 2.The student will also have to pass a navigation progress test in order to be able to make the long x-country flight and to further built-up hours as pilot in command

Exercise 28 SOLO Long X-Country Preparation

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's proficiency in cross-country operations by planning and flying a 3 hour solo day cross-country flight using routes not previously assigned. To improve the students proficiency in navigating by all available means, including pilotage, dead reckoning, VOR, and flight following. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at previously visited airports such as LGZA, LGKF, LGSK, LGSO, LGMK, LGNX.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student has conducted the flight as assigned. The completed navigation log will be reviewed, approved by the instructor, and the student debriefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course
- ✓ Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedures (arrival – departure) at the destination
- ✓ AIP, Airport diagram, Comms etc.
- ✓ Emergencies (questions by the instructor)

Exercise 29 SOLO X-Country Triangle 300 NM

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 5-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. Further familiarization with routes and long distanced airports.

Note 1: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and fixes from known Radio Aids (VOR & NDB).

Note 2: The Student must be prepared to land at :

- ⇒ LGMT, LGHI or
- ⇒ LGKO, LGPL
- ⇒ LGKO, LGRP
- ⇒ LGSM, LGLX
- ⇒ LGKF, LGRK
- ⇒ LGKC, LGIR

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, without any assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes.

The completed navigation log will be reviewed, approved by the instructor, and the student briefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

The questions should be about off-course corrections procedures and "simulated lost" situation, or other emergencies. The student should be able to answer without hesitation.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)
- ✓ Use of VHF Omni Range (USE available radio aids)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)

- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

2.2.5 PHASE 4 – IR AND MULTI-ENGINE TRAINING

OBJECTIVE: The emphasis of phase 4 is on IR operations and multi-engine training. The student will learn precise airplane attitude control by instrument reference. Additionally, the student will gain greater competence in the use of navigation systems. During the multi-engine training the applicant will learn operating procedures, systems and performance considerations. The student will also learn to accurately use performance charts and compute weight & balance data to control weight & balance conditions of the multi-engine airplane.

In addition the student will learn principles, techniques, and procedures, which apply to single engine and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: Phase four is complete when the student can demonstrate precise airplane attitude control by instrument reference only. This will include the use of full and partial panel reference. In addition the student will demonstrate accurate use of navigation systems by maintaining positional awareness at all times.

Finally the student has to pass the final stage check with minimum score of 80% .

Note: Pre solo night written test is required.

Integration with theoretical knowledge

TWO HOURS GROUND BRIEFING

At the beginning of phase 4 the instructor will brief the student(s) on the fundamentals of Basic Attitude Instrument flying. The purpose of this brief is to begin to create a foundation and understanding of the basic skills and techniques required to control an aircraft solely by reference to instruments.

CONTENT

- ✓ Radial scanning
- ✓ Pitch plus power equals performance
- ✓ Introduce 6 basic instruments and their purpose (i.e. pitch, bank, and power)
- ✓ Discuss Control and Performance instruments and indications.
- ✓ Discuss three fundamentals of instrument scan. Cross check, interpretation, and aircraft control.
- ✓ Introduce concept of primary and supporting instruments in four phases of flight, straight and level, climbs, descents, and turns including entries and level off procedures.

COMPLETION STANDARDS. The integration will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of basic attitude instrument flying principles.

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 36: VOR Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures VOR Approaches.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGTG approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including DME ARC at LGTG approach
- ✓ Initial Approach to the VOR
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The Inbound Procedure
- ✓ Re-Check of Identification Code and Altimeter Setting

- ✓ The Final Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 37: NDB Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures NDB Approaches.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGSK approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Pre-flight Discussion Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including VOR HOLDING at SKP and approach to LGSK
- ✓ Initial Approach to the NDB
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The NDB Inbound Procedure

- ✓ Re-Check of Identification Code and Altimeter Setting
- ✓ The Final NDB Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a IR x-country flight. To also review to the student the non-precision approaches procedures NDB and VOR Approaches. The student must be prepared for IR flight to LGSK or LGZA or LGKF or LGMK (full stop) and IR departure to LGMG.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Note: The recommended minimum will be completed in more than one sortie

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation), AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 39: Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a x-country flight.

Note 1: The recommended minimum may be completed in more than one sortie

Note 2: In the first flight use the nearest ILS's LGAV (A prior ATC approval is required to be obtained by the instructor for ILS approach without landing), LGTG or LGEL. For the next flights use LGTS without full stop landing (If a full stop landing is performed the student will be charged the landing fees) or LGPZ.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Precision Approach Charts
- ✓ Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ Navaid Requirements, e.g. Radar, ADF, etc.
- ✓ Communication (ATC Liaison and R/T Phraseology)

Review:

- ✓ Holding Procedure
- ✓ The Final Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Completion of Aerodrome Approach Checks
- ✓ Initial Approach Procedure
- ✓ Selection of the ILS Frequency and Identification of Coding
- ✓ Operating Minima
- ✓ Achieving the Horizontal and Vertical Patterns
- ✓ Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix to the
- ✓ Use of DME {as applicable)
- ✓ Go Around arid Missed Approach Procedure
- ✓ Review of the Published Instructions

Flight Lesson Introduce Air Exercise Precision Approach Procedure

- ✓ Initial Approach to the ILS
- ✓ Holding Procedure
- ✓ Frequency Selection and Identification of ILS
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ Communication {ATC Liaison and R/T Phraseology)
- ✓ Determination of Operating Minima and Altimeter Setting
- ✓ ILS Entry Methods
- ✓ Radar Vectors

- ✓ The Descent Rate on Final Approach
- ✓ Maintaining the Localizer and Glide Path
- ✓ Decision Height
- ✓ Missed Approach Procedure

Exercise 40: Long IR X-Country

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a long IR x-country flight. The student must be prepared for IR flight and DME ARC to LGIR and ILS approach to LGRP.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives.

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation)
- ✓ AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials, etc.
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position .Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 41: SPICUS

EXERCISE OBJECTIVE: To further increase student's confidence to flight by reference to instruments on a IR x-country flight prepared by the student without any assistance.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of emergencies
- ✓ Review of communications and ATC clearance
- ✓ Review lesson objectives and establish targets

Flight Lesson Holdings - Precision and Non Precision Approach Procedures

- ✓ Flight Preparation
- ✓ Communications (Departure, En-route and Arrival)
- ✓ En-route awareness and airmanship (i.e. position and ETA estimation)
- ✓ VOR Holding
- ✓ VOR Approaches
- ✓ ILS Approaches
- ✓ NDB Holding
- ✓ NDB Approaches

Exercise 42: Night Rating

EXERCISE OBJECTIVE: To develop the student's ability to make solo night flights in the local practice area and airport traffic pattern. To familiarize the student with such aspects of night operations as: night vision, night orientation, and judgment of distance, use of cockpit lights, position lights, landing lights, and night emergency procedures

COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Night vision and vertigo
- ✓ Orientation in local area
- ✓ Judgment of distance
- ✓ Aircraft lights
- ✓ Airport lights
- ✓ Taxi technique
- ✓ Takeoff and landing technique
- ✓ Collision avoidance
- ✓ Unusual attitude recovery
- ✓ Emergencies

Flight Lesson Dual Basic Night Flying

- ✓ Start up procedures
- ✓ Local procedures -including ATC liaison
- ✓ Taxiing
- ✓ Parking area and taxiway lighting
- ✓ Judgment of speed and distances
- ✓ Use of taxiway lights
- ✓ Avoidance of hazards -obstruction lighting
- ✓ Instrument checks
- ✓ Holding point -lighting procedure
- ✓ Initial familiarization at night
- ✓ Local area orientation
- ✓ Significance of lights on other aircraft
- ✓ Ground obstruction lights
- ✓ Division of piloting effort -external/instrument reference

- ✓ Aerodrome lighting -Approach and runway lighting (including VASI and PAPI)
- ✓ Threshold lights
- ✓ Approach lighting
- ✓ Visual approach slope indicator systems

NIGHT CIRCUITS

- ✓ Line up
- ✓ Visual references during the take-off run
- ✓ Transfer to instruments
- ✓ Establishing the initial climb
- ✓ Use of flight instruments
- ✓ Instrument climb and initial turn
- ✓ The circuit
- ✓ Aeroplane positioning -reference to runway lighting
- ✓ The traffic pattern and lookout
- ✓ Initial approach and runway lighting demonstration
- ✓ Aeroplane positioning
- ✓ Changing aspect of runway lights and VASI (or PAPI). Intercepting the correct approach path
- ✓ Positioning, base leg and final approach
- ✓ Use of landing lights
- ✓ The flare and touchdown
- ✓ The roll out
- ✓ Turning off the runway -control of speed
- ✓ Missed approach. Use of instruments - Re-positioning in the circuit pattern

NIGHT NAVIGATION

- ✓ Particular emphasis on flight planning
- ✓ Selection of ground features visible at night
- ✓ Effect of cockpit lighting on map colours
- ✓ Use of radio aids
- ✓ Effect of moonlight upon visibility at night
- ✓ Emphasis on maintaining a 'minimum safe altitude'
- ✓ Alternate aerodromes -restricted availability
- ✓ Restricted recognition of weather deterioration
- ✓ Lost procedures

NIGHT EMERGENCIES

- ✓ Radio failure
- ✓ Failure of runway lighting
- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
- ✓ Failure of aeroplane navigation lights
- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure

Exercise 50: Introduction to Multi Engine Principles

SIX HOURS GROUND BRIEFING INTRODUCTION TO MULTI ENGINE

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on multi-engine aerodynamics, operating procedures, systems, and performance considerations. The applicants will learn to accurately use performance charts and compute weight and balance data to control the weight and balance conditions of the multi-engine airplane. In addition the students will learn principles, techniques, and procedures which apply to engine-out and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: This lesson will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of multi-engine flying principles.

AIR LEGISLATION

- ✓ Aeroplane performance group definitions (JAA)

PRINCIPLES OF FLIGHT-THE PROBLEMS

- ✓ Asymmetry Control
- ✓ Performance
- ✓ failed engine propeller drag
- ✓ Total drag increase
- ✓ Asymmetry of lift
- ✓ Effect of yaw in level and turning flight
- ✓ Thrust and rudder side force couples
- ✓ Effect on moment arms

CONTROL IN ASYMMETRIC POWER FLIGHT

- ✓ Use, misuse and limits of:
  - o Rudder
  - o Aileron
  - o Elevators
- ✓ Effect of bank/sideslip/balance
- ✓ Decrease of aileron/rudder effectiveness
- ✓ foot loads and trimming

MINIMUM CONTROL AND SAFETY SPEEDS

- ✓ Minimum control speed (Vmc)
- ✓ Factors affecting (Vmc)
- ✓ Landing gear
- ✓ Flaps
- ✓ Cowl flaps/cooling gills
- ✓ Pilot reaction/competence
- ✓ banking towards the operating engine

- ✓ feathering
- ✓ Critical engine
- ✓ Take-off safety speed
- ✓ Definition/origin of v2

AEROPLANE PERFORMANCE -ONE ENGINE INOPERATIVE

- ✓ Effect on excess power available
- ✓ Single-engine ceiling
- ✓ cruising, range and endurance acceleration/deceleration
- ✓ zero thrust, definition and purpose

PROPELLERS

- ✓ Variable pitch -general principles
- ✓ Feathering/unfeathering mechanism and limitations

SPECIFIC AEROPLANE TYPE AEROPLANE AND ENGINE SYSTEMS

- ✓ Operation normal.
- ✓ operation abnormal
- ✓ emergency procedures

LIMITATIONS –AIRFRAME

- ✓ load factors
- ✓ Landing gear/flap limiting speeds (Vlo and Vfe)
- ✓ Maximum speeds (Vno and Vne)

Limitations – ENGINE

- ✓ Rpm and manifold pressure
- ✓ Oil temperature and pressure
- ✓ Emergency procedures

MASS AND BALANCE

- ✓ To be covered in conjunction with the flight/owner's manual/pilot's operating handbook}

MASS AND PERFORMANCE

- ✓ (To be covered in conjunction with the flight/owner's manual/pilot's operating handbook) calculations for specific aeroplane type (all engines operating)
- ✓ Take-off run
- ✓ Take-off distance
- ✓ accelerate/stop distance
- ✓ landing distance
- ✓ landing run
- ✓ Take-off/climb out flight path
- ✓ Calculations for specific aeroplane type (one engine operating}

- ✓ landing distance
- ✓ landing run

Exercise 51: Take-Off and Climb

EXERCISE OBJECTIVE: During the lesson the student will become acquainted with the training airplane. The student should learn the attitudes, power settings, and configurations required for the performance of the listed manoeuvres and procedures using visual references.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations with a minimum of instructor assistance. The applicant will demonstrate the knowledge of attitudes, power settings, and configurations necessary to perform the listed manoeuvres and procedures by maintaining Altitude ± 200 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing

- ✓ Pre- Taxiing area precautions
- ✓ Greater mass -greater inertia
- ✓ Effect of differential power
- ✓ Precautions on narrow taxiways

PRE TAKE-OFF PROCEDURES

- ✓ Engine power checks
- ✓ Pre take-off checks c instructor's briefing to cover the procedure - to be followed should an emergency occur during take-off, e.g. engine failure

THE TAKE-OFF AND INITIAL CLIMB

- ✓ Factors affecting the length of the take-off run/distance
- ✓ Correct lift-off speed
- ✓ Importance of safety speed
- ✓ Crosswind take-off, considerations and procedures
- ✓ Short field take-off, considerations and procedures
- ✓ Engine handling after take-off, throttle/pitch/engine synchronization

CLIMBING

- ✓ Airmanship considerations
- ✓ Pre-climbing checks
- ✓ Engine considerations
- ✓ Use of throttle/pitch controls
- ✓ Maximum rate of climb speed
- ✓ Maximum angle of climb speed
- ✓ Synchronizing the engines

Exercise 52: Straight and Level Flight - Descend

EXERCISE OBJECTIVE: During this lesson, the student will review manoeuvres from the previous lesson. The student will be introduced to stalls, slow flight, steep turns and emergency operations to become familiar with the flight characteristics of the multi-engine aircraft.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations without instructor assistance. During take off and landing, the applicant will demonstrate good directional control and maintain lift off, climb, approach, and touchdown airspeed ±10 knots of the correct speed. Straight and level flight, climbs, and descends will be performed while maintaining assigned airspeed ±10 knots, roll-outs from turns ± 10º of assigned heading, and specified altitude ± 150 feet. The student will be able to demonstrate the correct flight procedures for manoeuvring during slow flight, steep turns, emergency descends, and the correct entry and recovery procedures for stalls. Slow flight manoeuvres and stalls must be completed no lower than 3,000 feet AGL or the manufacturers recommended altitude, whichever is higher.

STRAIGHT AND LEVEL FLIGHT

- ✓ Selections of power -throttle/pitch controls and Engine synchronization
- ✓ Fuel consumption aspects
- ✓ Use of trimming controls
- ✓ Operation of flaps (effect on pitch attitude, effect on airspeed)
- ✓ Operation of landing gear (effect on pitch attitude, effect on airspeed)
- ✓ Use of mixture controls
- ✓ Use of alternate air/carburetor heat controls
- ✓ Operation of cowl flaps/cooling gills
- ✓ Use of cabin ventilation and heating systems

DESCENDING

- ✓ Pre-descent checks
- ✓ Selection of throttle/pitch controls
- ✓ Engine cooling considerations

TURNING

- ✓ Medium turns
- ✓ Climbing/descending
- ✓ Steep turns (45 degrees of bank or more)

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine
- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse
- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine

- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

Exercise 55: IR – Multi Engine Piston - Emergencies

EXERCISE OBJECTIVE: REVIEW ALL IR ASPECTS. During this session, the student will review procedures and manoeuvres that require additional practice from the prior single engine IR lessons. The student should gain additional proficiency in instrument flight operations during a planned cross-country flight. The applicant will be introduced to engine-out manoeuvres and procedures during simulated instrument flight.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: At the completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight and level flight. The student will demonstrate the newly introduced manoeuvres and procedures using correct operating techniques, coordination, smoothness, and understanding. During engine-out operations, the applicant will be able to make decisions concerning the continued safety of the flight and readily identify the inoperative engine and likely problems. The applicant will exhibit proficiency to engine-out manoeuvres and procedures during simulated instrument flight

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson Review

- ✓ Engine failure during ALL engines approach or missed approach

Instrument flying on asymmetric power

- ✓ Flight instrument checks and services available
- ✓ Straight and level flight
- ✓ Climbing and descending
- ✓ Standard rate turns
- ✓ Level, climbing and descending turns including turns onto pre selected headings
- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV (use SKP – LGSK and TGG - LGTG)
- ✓ Procedure Turns
- ✓ Holding Procedures
- ✓ Engine failure during approach

Exercise 60 FINAL CHECK

Recommended minimum: TWO HOURS DUAL FLIGHT STAGE CHECK (ONE ASYMMETRIC and ONE IR)

EXERCISE OBJECTIVE: The chief instructor, assistant chief, or a designated check instructor will evaluate the student's skills. This is the final stage test in preparation for the CPL/IR(A) skill test. The review items may be performed with all engines operating or with one engine inoperative.

COMPLETION STANDARDS: The student will perform all VFR, IFR, and pertinent simulated emergency procedures at the proficiency level, as outlined in Appendix 2 to JAR-FCL 1.170 (CPL/IR (A) skill test).

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Use of flight manual
- ✓ Preparation of ATC flight plan. IFR flight plan/log

PRE-FLIGHT OPERATIONS AND DEPARTURE

- ✓ Use of checklist, airmanship, anti/de-icing procedures, etc., apply in all sections of the stage check
- ✓ Pre-flight inspection
- ✓ Weather Minima
- ✓ Taxiing
- ✓ Pre-take off briefing. Take off
- ✓ Transition to instrument flight
- ✓ Instrument departure procedures. Altimeter setting
- ✓ ATC liaison -compliance. R/T procedures

GENERAL HANDLING

- ✓ Control of the aeroplane by reference solely to instruments. Including:
- ✓ level flight at various speeds, trim
- ✓ Climbing and descending turns with sustained Rate 1 turn
- ✓ Recoveries from unusual attitudes. including sustained 45° bank turns and steep descending turns
- ✓ Recovery from approach to stall in level flight.
- ✓ Climbing/descending turns and in landing configuration
- ✓ Limited panel, stabilized climb or descents at Rate 1 turn onto given headings.
- ✓ Recovery from unusual attitudes.

EN-ROUTE IFR PROCEDURES

- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV
- ✓ Use of radio aids

- ✓ Level flight, control of heading, altitude and airspeed, power setting, trim technique
- ✓ Altimeter settings
- ✓ Timing and revision of ETAs (En-route hold -if required)
- ✓ Monitoring of flight progress, flight log, fuel usage, systems management
- ✓ ATC liaison and compliance. R/T procedures

APPROACH PROCEDURES

- ✓ Setting and checking of navigational aids, identification of facilities
- ✓ Arrival procedures, altimeter checks
- ✓ Approach and landing briefing, including descent/approach/landing checks
- ✓ Holding procedure
- ✓ Compliance with published approach procedure
- ✓ Altitude, speed heading control, (stabilized approach)
- ✓ Go-around action
- ✓ Missed approach procedure I landing
- ✓ ATC liaison -compliance, R/T procedures

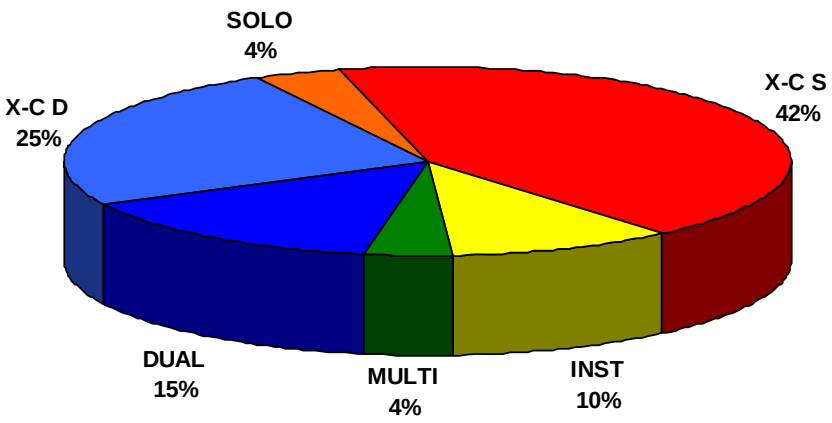
Simulated asymmetric flight

- ✓ Simulated engine failure after take-off or on go-around]
- ✓ Asymmetric approach and procedural go-around
- ✓ Asymmetric approach and landing, missed approach procedure

2.3 CPL(A) Integrated Course

2.3.1 Course Structure

The flying training of CPL(A) is divided into Four (4) phases and the air exersices devided between the phases as anylized in the following table:



PHASE 1	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1: Aircraft Familiarization and Preparation for Flight								2
Exercise 2: Preparation for and action after flight								2
Exercise 3: Air experience	1							
Exercise 4: Effects of controls – Attitudes and Movements	1							
Exercise 5: Taxiing and Ground Emmergencies	1							
Exercise 6: Straight and Level Flight	1							
Exercise 7: Climbing	1							
Exercise 8: Descending	1							
Exercise 9: Turning	1							
Exercise 10A: Slow Flight	1							
Exercise 10B: Stalls	1							
Exercise 11: Spin avoidance	1							
Exercise 12: Take-off and climb to downwind position	1,5							
Exercise 13: Circuit approach and landing	2							
Exercise 13E: Emergencies	1,5							
Exercise 14: Stage Check 1st SOLO	1	0,5						
	16	0,5	0	0	0	0	0	4
PHASE 2								
Exercise 16: Forced landing without power	3	1,5						
Exercise 17: Precautionary landing	3	3						
Exercise 18A: Introduction to Navigation			4					
Exercise 18B Navigation problems at lower levels and in reduced visibility			4					
Exercise 18C Radio navigation			5					
Exercise 19 Introduction to Instrument Flight					1			
Exercise 20 Local Area SOLO				5				
Exercise 19A: Basic Instruments – Pattern “A”					1			
Exercise 19b: Basic Instruments – Pattern “B”					1			
Exercise 21: Advancing to Navigation			10					
Exercise 25: X-Country SOLO				8				
Exercise 26 DUAL X-Country Triangle			14					
Exercise 27 SOLO X-Country Triangle 150 NM				6				
	6	4,5	37	19	3	0	0	0

PHASE 3								
Exercise 28 SOLO Long X-Country Preparation				40				
Exercise 29 SOLO X-Country Triangle 300 NM				5				
	0	0	0	45	0	0	0	0
PHASE 4 – IR								
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					1			
Exercise 31: Unusual Attitudes and Recovery					1			
Exercise 32 Use of Partial Panel					1			
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					2			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					2			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					1			
Exercise 42: Night Rating		1			4			
	0	1	0	0	12	0	0	0
PHASE 4 - MULTI-ENGINE TRAINING								
Exercise 50: Introduction to Multi Engine Principles								6
Exercise 51: Take-Off and Climb							1	
Exercise 52: Straight and Level Flight - Descend							1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure							2	
Exercise 54: ASYMMETRIC POWER FLIGHT “Take-Off and Approach”							2	
	0	0	0	0	0	0	6	6
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**22**	**6**	**37**	**64**	**15**	**0**	**6**	**10**
Exercise 60 FINAL CHECK							**1**	

2.3.2 PHASE 1

OBJECTIVE: During this phase the student shall do exercises up to the first solo flight comprised a total of at least 15 hours dual flight instruction on a single engine aircraft.

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Training Organization procedures Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Organization procedures Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Flight Training Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 3: Air experience

EXERCISE OBJECTIVE: The student will become familiar with the training airplane, its operating characteristics, flight controls, basic instruments and systems, pre-flight procedures, proper use of the checklist, and general good operating techniques and safety procedures. Instruction will be given in manoeuvring the airplane on the ground and in basic flight manoeuvres using the horizon (no the attitude indicator. Instructor must demonstrate all manoeuvres initially hiding ASI, VSI, etc). In flight training, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon. As basic flying skills are developed through training and experience, the pilot will acquire an awareness of these references.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the training airplane and safe operating techniques should be demonstrated.

Note: The notation (VR/IR) will be used throughout this syllabus to indicate the use of integrated instruction. Each new manoeuvre will be introduced by visual reference (VR) and attitude instrument reference (IR)

Flight Lesson

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Performing pre-flight line inspection to include required aircraft documents
- ✓ Correct use of the checklist
- ✓ Engine start and engine controls
- ✓ Radio communications on the ground and in flight
- ✓ Taxi -speed and directional control including use of brakes
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal takeoff
- ✓ Traffic pattern departure
- ✓ Local area familiarization which may include short point to point flight
- ✓ Straight and level flight (VR)
- ✓ Trim technique
- ✓ Medium banked turns (VR) and how to clear for traffic before turning
- ✓ Climbs (VR)
- ✓ Glides (VR)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane

Exercise 4: Effects of controls – Attitudes and Movements

EXERCISE OBJECTIVE: The student will become familiar with the controls of the aircraft and the effect of them during flight. Again, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be demonstrated.

Flight Lesson

- ✓ Primary effects when laterally level and when banked using the aileron and the rudder
- ✓ Effects of Airspeed and Power using the elevator during climb descend.
- ✓ Trimming controls (Nose attitude and then trim for straight and level, climb and descend)
- ✓ Flaps. Effects of Nose Attitude, Airspeed and Power
- ✓ Operation of Mixture control, Carburetor heat, Cabin heating/ventilation

Exercise 5: Taxiing and Ground Emergencies

EXERCISE OBJECTIVE: The student will be familiar with taxiing procedures normal and emergencies also with the aircraft parking area of the Global Air Services.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, without assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to taxi for take off and to the parking area after landing. The student shall be able to secure the airplane and fill the appropriate documents (tech log etc) by himself.

Flight Lesson

- ✓ Pre-taxi checks
- ✓ Starting, control of speed and stopping
- ✓ Engine handling
- ✓ Control of direction and turning
- ✓ Turning in confined spaces
- ✓ Parking area procedure and precautions
- ✓ Effects of wind and use of flying controls
- ✓ Effects of ground surface
- ✓ Freedom of rudder movement
- ✓ Marshalling signals
- ✓ Instrument checks
- ✓ Air traffic control procedures
- ✓ Emergencies
    - o Brake and steering failure

During the flight further training of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be given according to objectives of the Exercise 4 including demonstration of:

- ✓ Shallow turns
- ✓ Medium turns
- ✓ Steep turns
- ✓ Climb
- ✓ Descend
- ✓ Glides

Exercise 6: Straight and Level Flight

EXERCISE OBJECTIVE: The student will review and practice the four fundamentals forces of flight. Also, the student will be introduced further to climbing and throttle control, rudder control, and level off procedures. The student will perform communications, taxi and take-of rolls. Aircraft stability will be demonstrated to instil confidence and stress the importance of proper trim.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with no assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis performing climbs, descends and shallow – medium turns. A general understanding of the traffic pattern and landings techniques should be demonstrated.

Pre-flight Discussion and Briefing

(The pre-flight briefing will be performed by the student with the instructor assistance)

- ✓ Current and forecast weather/Notams
- ✓ Performance planning/weight and balance
- ✓ The Forces
- ✓ Longitudinal Stability and Control in Pitch
- ✓ Relationship of C of G to Control in Pitch
- ✓ Lateral and Directional Stability (Control of Lateral Level and Balance)
- ✓ Attitude and Balance Control Trimming
- ✓ Power Settings and Airspeeds
- ✓ Drag and Power Curves
- ✓ Range and Endurance

Flight Lesson

- ✓ Normal takeoff (performed by the student assisted by the instructor)
- ✓ Traffic pattern departure
- ✓ Normal climb (performed by the student assisted by the instructor)
- ✓ Straight and level at normal cruising power, attaining and maintaining straight and level flight (performed by the student without any assistance)
- ✓ Medium and steep turns (performed by the student assisted by the instructor)
- ✓ Glides (performed by the student assisted by the instructor)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane (performed by the student without any assistance)

Exercise 7: Climbing

EXERCISE OBJECTIVE: The student will review and practice the fundamentals of climb, turns, descend, glide, and turns in order to increase proficiency. The student also will perform takeoff assisted by the instructor.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to conduct all pre-flight operations and establish proper pitch attitude and power for climbs without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of the relationship between Power/Airspeed and Rate of Climb
- ✓ Maximum Rate of Climb (Vy) and Maximum Angle of Climb (Vx) (Effect of: Mass, Flaps and density Altitude)

Flight Lesson

- ✓ Use of checklist (performed by the students without any help)
- ✓ Pre-flight checks and engine start (performed by the students without any help)
- ✓ Radio communications (performed by the students without any help)
- ✓ Taxi (performed by the students without any help)
- ✓ Pre-takeoff checks (run-up) (performed by the students without any help)
- ✓ Normal takeoff (performed by the students without any help)
- ✓ Traffic pattern departure and entry (performed by the students assisted by the instructor)
- ✓ Straight and level (performed by the students without any help)
- ✓ Climbing (performed by the students without any help)
    - o Entry, maintaining the normal and max rate climb
    - o levelling off
    - o levelling off at selected altitudes
    - o Control in pitch, including use of trim
    - o En-route climb (cruise climb)
    - o climbing with flap down
    - o Maximum angle of climb
    - o Introduction to Slow Flight (ΒΑΠΕ – ΒΑΠΕ)
- ✓ Glides (performed by the students assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 8: Descending

EXERCISE OBJECTIVE: The student will demonstrate his ability to perform climbs and turns. The instructor will review descends and glides in order to increase student's proficiency. Also, the student will be introduced to combine rudder control and ailerons during S-turns (συνδυασμός πηδαλίων). A demonstration to slow flight (ΒΑΠΕ-ΒΑΠΕ) also will be repeated

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to perform without any assistance and establish proper pitch attitude and power for descends and glides. The student also will be able to perform Slow Flights and S-turns with the instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams (Performed by the student)
- ✓ Review performance planning/weight and balance (Performed by the student)
- ✓ Glide Descent Angle -Airspeed -Rate of Descent (Performed by the student)
- ✓ Effect of Flaps (Performed by the student)
- ✓ Effect of Wind (Performed by the student)
- ✓ Effect of Mass (Performed by the student)

Flight Lesson

- ✓ Use of checklist (Performed by the student)
- ✓ Pre-flight checks and engine start (Performed by the student)
- ✓ Radio communications (Performed by the student)
- ✓ Taxi (Performed by the student)
- ✓ Pre-takeoff checks (run-up) (Performed by the student)
- ✓ Normal takeoff (Performed by the student)
- ✓ Traffic pattern departure and entry (Performed by the student)
- ✓ Straight and level (Performed by the student)
- ✓ Climbs (Performed by the student)
- ✓ Descends and Glides (Performed by the student assisted by the instructor)
    - o Entry, maintaining and levelling off
    - o Levelling off at selected altitudes
    - o Glides
- ✓ Slow Flight (ΒΑΠΕ – ΒΑΠΕ) (Performed by the student assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 9: Turning

EXERCISE OBJECTIVE: The student will review and practice climb, descends and glide turns, to increase proficiency. Also, the student will review S-turns. The student will perform taxi and takeoff.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to establish proper pitch attitude and power for turns (climbing and descending) without instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Climbing and Descending Turns
- ✓ Turning onto Selected Headings -Use of Gyro Heading Indicator and Magnetic Compass

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)

Flight Lesson (Introduce) Air Exercise 9 Turning

- ✓ Entry and maintaining medium level turns
- ✓ Climbing turns
- ✓ Descending turns
- ✓ Turns onto selected headings, use of gyro heading indicator and compass
- ✓ Entry and maintaining steep turns

Exercise 10A: Slow Flight

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student will be expected to control airspeed in all manoeuvres within ± 10 kts, heading within 10° and ± 50 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius
- ✓ Airmanship using flaps at low airspeeds

- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 10B: Stalls

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce stalls.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Stall recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Characteristics of the Stall
- ✓ Angle of Attack
- ✓ The Effectiveness of the Controls at the Stall
- ✓ Factors Affecting the Stalling Speed:
    - o Effect of Flaps/Slats/Slots
    - o Effect of Power/Mass/C of G/Load Factor
    - o The Effects of Unbalance at the Stall
- ✓ The Symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Stalling & Recovery:
- ✓ Without Power
- ✓ With Power On
- ✓ With Flaps Down
- ✓ Stalling and Recovery at the Incipient Stage with 'Instructor Induced' Distractions

* Stalling & Recovery during manoeuvres involving more than 1 G (accelerated stalls, including, secondary stalls & recoveries). Consideration is to be given to manoeuvre limitations and references to The Owners/Flight manual or Pilot's Operating Handbook must also be made in relation to Mass and Balance limitations. These factors must also be covered in the next exercise spinning.

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level

- ✓ Climbs
- ✓ Descends
- ✓ Medium & steep turns
- ✓ Slow Flight

Flight Lesson (Introduce) Air Exercise 10 B Stalling

- ✓ Airmanship
- ✓ Safety checks (1A 5E)
- ✓ The symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Recovery without Power
- ✓ Recovery with Power
- ✓ Recovery when a Wing Drops at the Stall
- ✓ Stalling with Power 'ON' & Recovery
- ✓ Stalling with Flap 'Down' & Recovery
- ✓ Stalling with Power 'OFF' & Recovery
- ✓ Repetitive Stall

Exercise 11: Spin avoidance

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce spins.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Spin recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ SPIN RECOVERY at the INCIPIENT STAGE
- ✓ Causes, Stages, Autorotation and Characteristics of the Spin
- ✓ Recognition and Recovery at the Incipient Stage -entered from various flight attitudes Aeroplane
- ✓ Limitations
- ✓ Airmanship -Safety Checks
- ✓ SPIN RECOVERY at the DEVELOPED STAGE
- ✓ The Spin Entry
    - o Recognition & Identification of Spin Direction
    - o The Spin Recovery
    - o Use of Controls
    - o Effects of Power/Flaps (flap restriction applicable to type)
    - o Effect of the C of G upon spinning characteristics
    - o Spinning from Various Flight Attitudes
    - o Aeroplane Limitations
    - o Airmanship -Safety Checks
    - o Common Errors during Recovery

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 11A/ B Sinning

AIR EXERCISE 11 A SPIN RECOVERY at the INCIPIENT STAGE

- ✓ Aeroplane Limitations.
- ✓ Airmanship
- ✓ Safety Checks

- ✓ Recognition at the Incipient Stage of a Spin
- ✓ Recoveries from Incipient Spins entered from various attitudes with the Aeroplane in the Clean

AIR EXERCISE 11 B SPIN RECOVERY at the DEVELOPED STAGE - Aeroplane Limitations

- ✓ The Spin Entry
- ✓ Recognition & Identification of the Spin Direction the Spin
- ✓ Recovery (reference to Flight Manual)
- ✓ Effects of Power/Flaps (restrictions applicable to aeroplane type)

NOTE: Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.

Exercise 12: Take-off and climb to downwind position

EXERCISE OBJECTIVE: In addition to providing a review of manoeuvres previously presented, the student will be introduced to different climb and descent configurations and how to transition from one to the other. Loss of engine power emergency procedures during takeoff and climb out will also be introduced.

COMPLETION STANDARDS: The student should display, through performance and discussion, complete understanding of possible emergencies and procedures to use during takeoff. The student shall maintain airspeeds with increased awareness of impending stalls and positive coordinated control usage becoming more consistent. Configuration changes shall be accomplished with correct usage of throttle control and trim technique. Principles of aircraft control during landing should be understood.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Handling- Factors affecting the length of Take-off Run and Initial Climb
    - o The Correct Lift Off Speed, use of Elevators (Safeguarding the Nose Wheel), Rudder and Power
    - o Effect of Wind (including Crosswind Component)
    - o Effect of Flaps (including the Decision to Use and the Amount Permitted)
    - o Effect of Ground Surface and Gradient upon the Take-off Run
    - o Effect of Mass, Altitude and Temperature on Take-off and climb Performance
    - o Pre Take-Off Checks
    - o Air Traffic Control Procedure (before Take-Off)
    - o Drills, during and after Take-off
    - o Short/Soft Field Take-Off Considerations/Procedures
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Airmanship and Air Traffic Control Procedures

Flight Lesson (Review)

- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 12 Take-off and landing to downwind position

- ✓ Pre Take-Off Checks
- ✓ Into Wind Take-Off
- ✓ Crosswind Take-Off
- ✓ Drills During and After Take-Off

- ✓ Short Take-Off and Soft Field Procedure/Techniques (including Performance Calculations)

Exercise 13: Circuit approach and landing

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 13E: Emergencies

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce procedures to employ during partial or complete loss of power while on any leg of the traffic pattern.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing (unassisted). Safe control of approach and landing following simulated loss of power on downwind will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Wake Turbulence Awareness
    - o Wind shear Awareness
    - o Airmanship and Air Traffic Control Procedures
    - o Mislanding/Go around
    - o Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Emergencies

- ✓ Aborted Take-Off
- ✓ Engine Failure after Take-Off
- ✓ Glide Approach (High Altitude Engine Failure and Emergency Landing)
- ✓ Miss-landing/go-around

Exercise 14: Stage Check 1st SOLO

EXERCISE OBJECTIVE: The objective of this flight is to determine if the student possesses a working knowledge of regulations and safe operating procedures, as well as the competency to pilot an aircraft in solo flight.

COMPLETION STANDARDS: The student shall demonstrate the knowledge and skill to perform the listed manoeuvres and procedures and for continued solo flight in the local training area. The following standards will apply:

- ✓ Hold attitude to within ±200 feet of assigned
- ✓ Hold heading to within ±15° of assigned
- ✓ Maintain airspeed to within ±10 kts of desired
- ✓ Recognition of stalls with prompt, positive recovery
- ✓ Safe traffic patterns exercising collision avoidance techniques
- ✓ Demonstrate the ability to execute safe takeoff and landings
- ✓ Safely handle emergency situations presented with no loss of control

Pre-flight Discussion and Briefing - Oral Examination

- ✓ Test knowledge of aircraft
- ✓ Test knowledge of JAR-FCL flight rules which are pertinent to student solo flights
- ✓ Test knowledge and awareness of good operating practices

Stage Check Flight Test

- ✓ Extensive pre-flight, engine start and run-up
- ✓ Taxiing
- ✓ Normal/crosswind takeoff and departure
- ✓ Turns
- ✓ Climbs
- ✓ Glides
- ✓ Slow flight
- ✓ Stall -power off
- ✓ Stall -power on
- ✓ Collision avoidance procedures
- ✓ Traffic pattern operations
- ✓ Normal/crosswind approach and landing
- ✓ Simulated loss of engine power shortly after takeoff and while on downwind
- ✓ Use of Checklist
- ✓ Parking
- ✓ Engine shut down and securing airplane

2.3.3 PHASE 2

OBJECTIVE: During this phase the student shall do exercises up to the first solo cross-country flight comprise a total of at least 15 hours of dual flight instruction and at least 20 hours solo flight on a single-engine aeroplane.

Exercise 16: Forced landing without power

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18A: Introduction to Navigation

EXERCISE OBJECTIVE: To re-familiarize the student with the local practice area and to improve proficiency with more advanced manoeuvres in preparation for local area solo practice flights. The student will be instructed in the planning and conducting of cross-country flights using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o map selection and preparation, choice of route, controlled airspace
    - o danger, prohibited and restricted areas, safety altitudes
    - o calculations, magnetic heading(s) and time(s) en-route, fuel consumption
    - o mass and balance, mass and performance
    - o flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
    - o aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
    - o Departure
    - o organisation of cockpit workload
    - o departure procedures
    - o altimeter settings
    - o ATC liaison in controlled/regulated airspace
    - o setting heading procedure
    - o noting of ETAs
    - o maintenance of altitude and heading
    - o revisions of ETA and heading
    - o log keeping
    - o use of radio, use of navaids
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o transiting controlled/regulated airspace
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ departure procedures, altimeter settings
- ✓ ATC liaison in controlled/regulated airspace
- ✓ setting heading procedure, noting of ETAs, maintenance of altitude and heading
- ✓ revisions of ETA and heading
- ✓ log keeping
- ✓ use of radio, use of navaids
- ✓ minimum weather conditions for continuation of flight, in-flight decisions
- ✓ diversion procedures
- ✓ uncertainty of position procedure
- ✓ lost procedure
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o altimeter setting
    - o entering the traffic pattern
    - o circuit procedures

Exercise 18B Navigation problems at lower levels and in reduced visibility

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce navigation problems at lower levels and in reduced visibility.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing. Safe control of aircraft and correct decision making at lower levels and in reduced visibility will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o actions prior to descending
    - o hazards (e.g. obstacles, and terrain)
    - o difficulties of map reading
    - o effects of wind and turbulence
    - o avoidance of noise sensitive areas
    - o joining the circuit
    - o bad weather circuit and landing

Flight Lesson (Review)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Navigation problems at lower levels and in reduced visibility
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Actions Prior to Descending
    - o Effects of Wind and Turbulence

- Hazards of operating at low levels
- Low Cloud and Good Visibility
- Low Cloud and Poor Visibility
- Avoidance of Moderate to Heavy Rain Showers
- Effects of precipitation (forward visibility)
- bad weather circuit and landing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight

- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 20 Local Area SOLO

EXERCISE OBJECTIVE: To develop student's confidence and proficiency through area solo practice of assigned manoeuvres

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: First area solo: The instructor must be on the tower in order to supervise the take-off, land and student's communications. The flight will be performed at the DAPORI – AIGINA area or LGMG – ALEPOCHORI - ALKYON.

Pre-flight Discussion and Briefing

- ✓ Pre X-Country Solo written test passed
- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson Area solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (with the minimum assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
- ✓ departure procedures
- ✓ ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19b: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 21: Advancing to Navigation

EXERCISE OBJECTIVE: To re-familiarize with dispatch procedures, pre-flight planning, post flight requirements, and to the student's proficiency in cross-country planning procedures. The student must be prepared in order to conduct a cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment. A very good review also in the emergency landings and emergency procedures will be performed in order to develop the ability to take proper action in emergency situations.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: The flight will be performed at the IKAROS - KOPAIDA area. Forced – emergency landings will be performed at IKAROS or KOPAIDA and returning on the airport (Megara) at 2500 to 3500 feet.

Note 3: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (with minimum assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student is able to determine position (with assistance) in the practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern. The student also must be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course making the appropriate radio communications. The student should be competent in navigating by means of pilotage, dead reckoning, VOR, and / or ADF, and when so instructed, is able to accurately plan and fly a diversion to an alternate airport. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure".

Note 3: The student has to be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should also be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Selection of forced landing areas
    - o Provision for change of plan
    - o Gliding distance -consideration
    - o Planning the descent Key positions
    - o Engine failure checks

- Use of radio -R/T 'Distress' Procedure
- The base leg
- The final approach
- Go around
- The landing considerations
- Actions after landing -Aeroplane security
- Causes of engine failure

✓ Advancing to QDM Meaning and Use (VOR/ADF)

Considerations are to be given to airplane performance, Mass & Balance and NAV Log calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

✓ Normal / crosswind takeoff and landing
✓ Short/Soft field takeoff and landing
✓ Traffic pattern departure and entry
✓ Compass turns
✓ NDB & VOR Homing
✓ Position determination on the map using VOR & NDB
✓ Dead reckoning pilotage
✓ Forced Landing Procedures
✓ Selection of Landing Area
✓ Gliding Distance Considerations
✓ Planning the descent:
- Key Positions
- Engine Failure Checks
- Engine cooling precautions

✓ Use of Radio
✓ The Base Leg
✓ The Final Approach
✓ The Landing } When the Exercise is
Actions after Landing } conducted at an
Aeroplane Security } Aerodrome
✓ Airmanship

Exercise 25: X-Country SOLO

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two hours day cross-country flight. The student must be well prepared in order to conduct a SOLO cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG or LGMG – ALEPOCHORI – GERMI – LARIMNA - MANTOUDI – SKIATHOS and reverse route or LGMG – DAPORI – KOR – IXONI – RIO- MESSI – RIO - IXONI – KOR – DAPORI or LGMG – DAPORI – EGN – YDRA – LGPH – YDRA – EGN - DAPORI.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep time using map time-lines and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Opening and closing VFR flight plan, Procedure at unfamiliar airports
- ✓ Emergencies, Pre X-Country Solo written test passed
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson X-Country solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (without any assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
    - o departure procedures
    - o ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace

- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 26 DUAL X-Country Triangle

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 2-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. To introduce to the student the VFR routes.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

Note 2: The Student must be prepared for the following X-Country:

- ⇒ LGMG – ALEPOCHORI – GERMI – LARIMNA – AIDIPSOS – LGBL. LGBL – LGSK. LGSK – MADOUDI – PSACHNA – CHALKIS – OROPOS – MALAKASA – LIMNI – OAKA – XOLARGOS – LGAT – EGN – LGMG.
- ⇒ LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG OR LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG.
- ⇒ LGMG – DAPORI – KOR – IXONI – ARA – LGZA, LGZA – LGKF – MESSI – RIO – IXONI – KOR – DAPORI - LGMG

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure". The student must also be able to execute promptly and safely and without any hesitation emergency procedures like engine failure, electrical load failure, smoke and fire etc.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of lessons 18A, 18B, 18C

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)

Flight Lesson (Introduce) Air Exercise Radio Navigation

- ✓ Use of VHF Omni Range (USE SKOPELOS, ALMIROS,TANAGRA or ARA, DDM, KEA, ATV)
- ✓ Availability, AIP, frequencies

- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)
- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies (USE LGSK and EGN)
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

Exercise 27 SOLO X-Country Triangle 150 NM

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two and half hours day cross-country flight with landings at two unfamiliar airports. To improve the student's proficiency in navigating by means of pilotage, dead reckoning, VOR, and / or ADF; and to further increase the student's confidence and ability to properly handle unexpected flight situations.. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at different airpots as in exercise 26 instructed.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course, Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedure at unfamiliar airports
- ✓ Emergencies

2.3.4 PHASE 3

OBJECTIVE: During phase 3 the student will review previous manoeuvres from phases 1 & 2.The student will also have to pass a navigation progress test in order to be able to make the long x-country flight and to further built-up hours as pilot in command

Exercise 28 SOLO Long X-Country Preparation

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's proficiency in cross-country operations by planning and flying a 3 hour solo day cross-country flight using routes not previously assigned. To improve the students proficiency in navigating by all available means, including pilotage, dead reckoning, VOR, and flight following. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at previously visited airports such as LGZA, LGKF, LGSK, LGSO, LGMK, LGNX.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student has conducted the flight as assigned. The completed navigation log will be reviewed, approved by the instructor, and the student debriefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course
- ✓ Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedures (arrival – departure) at the destination
- ✓ AIP, Airport diagram, Comms etc.
- ✓ Emergencies (questions by the instructor)

Exercise 29 SOLO X-Country Triangle 300 NM

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 5-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. Further familiarization with routes and long distanced airports.

Note 1: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and fixes from known Radio Aids (VOR & NDB).

Note 2: The Student must be prepared to land at :

- ⇒ LGMT, LGHI or
- ⇒ LGKO, LGPL
- ⇒ LGKO, LGRP
- ⇒ LGSM, LGLX
- ⇒ LGKF, LGRK
- ⇒ LGKC, LGIR

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, without any assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes.

The completed navigation log will be reviewed, approved by the instructor, and the student briefed prior to the student receiving credit for this lesson. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

The questions should be about off-course corrections procedures and "simulated lost" situation, or other emergencies. The student should be able to answer without hesitation.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)
- ✓ Use of VHF Omni Range (USE available radio aids)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)

- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

2.3.5 PHASE 4 – IR AND MULTI-ENGINE TRAINING

OBJECTIVE: The emphasis of phase 4 is on basic IR operations (basic module) and multi-engine training. The student will learn basic airplane attitude control by instrument reference. Additionally, the student will gain greater competence in the use of navigation systems. During the multi-engine training the applicant will learn operating procedures, systems and performance considerations. The student will also learn to accurately use performance charts and compute weight & balance data to control weight & balance conditions of the multi-engine airplane.

In addition the student will learn principles, techniques, and procedures, which apply to single engine and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: Phase four is complete when the student can demonstrate basic airplane attitude control by instrument reference only. This will include the use of full and partial panel reference. In addition the student will demonstrate accurate use of radio navigation systems by maintaining positional awareness at all times.

Finally the student has to pass the final stage check with minimum score of 80% .

Note: Pre solo night written test is required.

Integration with theoretical knowledge

TWO HOURS GROUND BRIEFING

At the beginning of phase 4 the instructor will brief the student(s) on the fundamentals of Basic Attitude Instrument flying. The purpose of this brief is to begin to create a foundation and understanding of the basic skills and techniques required to control an aircraft solely by reference to instruments.

CONTENT

- ✓ Radial scanning
- ✓ Pitch plus power equals performance
- ✓ Introduce 6 basic instruments and their purpose (i.e. pitch, bank, and power)
- ✓ Discuss Control and Performance instruments and indications.
- ✓ Discuss three fundamentals of instrument scan. Cross check, interpretation, and aircraft control.
- ✓ Introduce concept of primary and supporting instruments in four phases of flight, straight and level, climbs, descents, and turns including entries and level off procedures.

COMPLETION STANDARDS. The integration will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of basic attitude instrument flying principles.

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 42: Night Rating

EXERCISE OBJECTIVE: To develop the student's ability to make solo night flights in the local practice area and airport traffic pattern. To familiarize the student with such aspects of night operations as: night vision, night orientation, and judgment of distance, use of cockpit lights, position lights, landing lights, and night emergency procedures

COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Night vision and vertigo
- ✓ Orientation in local area
- ✓ Judgment of distance
- ✓ Aircraft lights
- ✓ Airport lights
- ✓ Taxi technique
- ✓ Takeoff and landing technique
- ✓ Collision avoidance
- ✓ Unusual attitude recovery
- ✓ Emergencies

Flight Lesson Dual Basic Night Flying

- ✓ Start up procedures
- ✓ Local procedures -including ATC liaison
- ✓ Taxiing
- ✓ Parking area and taxiway lighting
- ✓ Judgment of speed and distances
- ✓ Use of taxiway lights
- ✓ Avoidance of hazards -obstruction lighting
- ✓ Instrument checks
- ✓ Holding point -lighting procedure
- ✓ Initial familiarization at night
- ✓ Local area orientation
- ✓ Significance of lights on other aircraft
- ✓ Ground obstruction lights
- ✓ Division of piloting effort -external/instrument reference

- ✓ Aerodrome lighting -Approach and runway lighting (including VASI and PAPI)
- ✓ Threshold lights
- ✓ Approach lighting
- ✓ Visual approach slope indicator systems

NIGHT CIRCUITS

- ✓ Line up
- ✓ Visual references during the take-off run
- ✓ Transfer to instruments
- ✓ Establishing the initial climb
- ✓ Use of flight instruments
- ✓ Instrument climb and initial turn
- ✓ The circuit
- ✓ Aeroplane positioning -reference to runway lighting
- ✓ The traffic pattern and lookout
- ✓ Initial approach and runway lighting demonstration
- ✓ Aeroplane positioning
- ✓ Changing aspect of runway lights and VASI (or PAPI). Intercepting the correct approach path
- ✓ Positioning, base leg and final approach
- ✓ Use of landing lights
- ✓ The flare and touchdown
- ✓ The roll out
- ✓ Turning off the runway -control of speed
- ✓ Missed approach. Use of instruments - Re-positioning in the circuit pattern

NIGHT NAVIGATION

- ✓ Particular emphasis on flight planning
- ✓ Selection of ground features visible at night
- ✓ Effect of cockpit lighting on map colours
- ✓ Use of radio aids
- ✓ Effect of moonlight upon visibility at night
- ✓ Emphasis on maintaining a 'minimum safe altitude'
- ✓ Alternate aerodromes -restricted availability
- ✓ Restricted recognition of weather deterioration
- ✓ Lost procedures

NIGHT EMERGENCIES

- ✓ Radio failure
- ✓ Failure of runway lighting
- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
- ✓ Failure of aeroplane navigation lights
- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure

Exercise 50: Introduction to Multi Engine Principles

SIX HOURS GROUND BRIEFING INTRODUCTION TO MULTI ENGINE

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on multi-engine aerodynamics, operating procedures, systems, and performance considerations. The applicants will learn to accurately use performance charts and compute weight and balance data to control the weight and balance conditions of the multi-engine airplane. In addition the students will learn principles, techniques, and procedures which apply to engine-out and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: This lesson will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of multi-engine flying principles.

AIR LEGISLATION

- ✓ Aeroplane performance group definitions (JAA)

PRINCIPLES OF FLIGHT-THE PROBLEMS

- ✓ Asymmetry Control
- ✓ Performance
- ✓ failed engine propeller drag
- ✓ Total drag increase
- ✓ Asymmetry of lift
- ✓ Effect of yaw in level and turning flight
- ✓ Thrust and rudder side force couples
- ✓ Effect on moment arms

CONTROL IN ASYMMETRIC POWER FLIGHT

- ✓ Use, misuse and limits of:
  - o Rudder
  - o Aileron
  - o Elevators
- ✓ Effect of bank/sideslip/balance
- ✓ Decrease of aileron/rudder effectiveness
- ✓ foot loads and trimming

MINIMUM CONTROL AND SAFETY SPEEDS

- ✓ Minimum control speed (Vmc)
- ✓ Factors affecting (Vmc)
- ✓ Landing gear
- ✓ Flaps
- ✓ Cowl flaps/cooling gills
- ✓ Pilot reaction/competence
- ✓ banking towards the operating engine

- ✓ feathering
- ✓ Critical engine
- ✓ Take-off safety speed
- ✓ Definition/origin of v2

AEROPLANE PERFORMANCE -ONE ENGINE INOPERATIVE

- ✓ Effect on excess power available
- ✓ Single-engine ceiling
- ✓ cruising, range and endurance acceleration/deceleration
- ✓ zero thrust, definition and purpose

PROPELLERS

- ✓ Variable pitch -general principles
- ✓ Feathering/unfeathering mechanism and limitations

SPECIFIC AEROPLANE TYPE AEROPLANE AND ENGINE SYSTEMS

- ✓ Operation normal.
- ✓ operation abnormal
- ✓ emergency procedures

LIMITATIONS –AIRFRAME

- ✓ load factors
- ✓ Landing gear/flap limiting speeds (Vlo and Vfe)
- ✓ Maximum speeds (Vno and Vne)

Limitations – ENGINE

- ✓ Rpm and manifold pressure
- ✓ Oil temperature and pressure
- ✓ Emergency procedures

MASS AND BALANCE

- ✓ To be covered in conjunction with the flight/owner's manual/pilot's operating handbook}

MASS AND PERFORMANCE

- ✓ (To be covered in conjunction with the flight/owner's manual/pilot's operating handbook) calculations for specific aeroplane type (all engines operating)
- ✓ Take-off run
- ✓ Take-off distance
- ✓ accelerate/stop distance
- ✓ landing distance
- ✓ landing run
- ✓ Take-off/climb out flight path
- ✓ Calculations for specific aeroplane type (one engine operating}

- ✓ landing distance
- ✓ landing run

Exercise 51: Take-Off and Climb

EXERCISE OBJECTIVE: During the lesson the student will become acquainted with the training airplane. The student should learn the attitudes, power settings, and configurations required for the performance of the listed manoeuvres and procedures using visual references.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations with a minimum of instructor assistance. The applicant will demonstrate the knowledge of attitudes, power settings, and configurations necessary to perform the listed manoeuvres and procedures by maintaining Altitude ± 200 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing

- ✓ Pre- Taxiing area precautions
- ✓ Greater mass -greater inertia
- ✓ Effect of differential power
- ✓ Precautions on narrow taxiways

PRE TAKE-OFF PROCEDURES

- ✓ Engine power checks
- ✓ Pre take-off checks c instructor's briefing to cover the procedure - to be followed should an emergency occur during take-off, e.g. engine failure

THE TAKE-OFF AND INITIAL CLIMB

- ✓ Factors affecting the length of the take-off run/distance
- ✓ Correct lift-off speed
- ✓ Importance of safety speed
- ✓ Crosswind take-off, considerations and procedures
- ✓ Short field take-off, considerations and procedures
- ✓ Engine handling after take-off, throttle/pitch/engine synchronization

CLIMBING

- ✓ Airmanship considerations
- ✓ Pre-climbing checks
- ✓ Engine considerations
- ✓ Use of throttle/pitch controls
- ✓ Maximum rate of climb speed
- ✓ Maximum angle of climb speed
- ✓ Synchronizing the engines

Exercise 52: Straight and Level Flight - Descend

EXERCISE OBJECTIVE: During this lesson, the student will review manoeuvres from the previous lesson. The student will be introduced to stalls, slow flight, steep turns and emergency operations to become familiar with the flight characteristics of the multi-engine aircraft.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations without instructor assistance. During take off and landing, the applicant will demonstrate good directional control and maintain lift off, climb, approach, and touchdown airspeed ±10 knots of the correct speed. Straight and level flight, climbs, and descends will be performed while maintaining assigned airspeed ±10 knots, roll-outs from turns ± 10º of assigned heading, and specified altitude ± 150 feet. The student will be able to demonstrate the correct flight procedures for manoeuvring during slow flight, steep turns, emergency descends, and the correct entry and recovery procedures for stalls. Slow flight manoeuvres and stalls must be completed no lower than 3,000 feet AGL or the manufacturers recommended altitude, whichever is higher.

STRAIGHT AND LEVEL FLIGHT

- ✓ Selections of power -throttle/pitch controls and Engine synchronization
- ✓ Fuel consumption aspects
- ✓ Use of trimming controls
- ✓ Operation of flaps (effect on pitch attitude, effect on airspeed)
- ✓ Operation of landing gear (effect on pitch attitude, effect on airspeed)
- ✓ Use of mixture controls
- ✓ Use of alternate air/carburetor heat controls
- ✓ Operation of cowl flaps/cooling gills
- ✓ Use of cabin ventilation and heating systems

DESCENDING

- ✓ Pre-descent checks
- ✓ Selection of throttle/pitch controls
- ✓ Engine cooling considerations

TURNING

- ✓ Medium turns
- ✓ Climbing/descending
- ✓ Steep turns (45 degrees of bank or more)

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine
- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse
- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine

- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

Exercise 60 FINAL CHECK

Recommended minimum: ONE HOUR DUAL FLIGHT STAGE CHECK

EXERCISE OBJECTIVE: The chief instructor, assistant chief, or a designated check instructor will evaluate the student's skills. This is the final stage test in preparation for the CPL(A) skill test. The review items may be performed with all engines operating or with one engine inoperative.

COMPLETION STANDARDS: The student will perform all VFR and pertinent simulated emergency procedures at the proficiency level, as outlined in Appendix 2 to JAR-FCL 1.170 (CPL (A) skill test).

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Use of flight manual
- ✓ Preparation of ATC flight plan. IFR flight plan/log

PRE-FLIGHT OPERATIONS AND DEPARTURE

- ✓ Use of checklist, airmanship, anti/de-icing procedures, etc., apply in all sections of the stage check
- ✓ Pre-flight inspection
- ✓ Weather Minima
- ✓ Taxiing
- ✓ Pre-take off briefing. Take off
- ✓ Transition to instrument flight
- ✓ Instrument departure procedures. Altimeter setting
- ✓ ATC liaison -compliance. R/T procedures

GENERAL HANDLING

- ✓ Control of the aeroplane by reference solely to instruments. Including:
- ✓ level flight at various speeds, trim
- ✓ Climbing and descending turns with sustained Rate 1 turn
- ✓ Recoveries from unusual attitudes. including sustained 45° bank turns and steep descending turns
- ✓ Recovery from approach to stall in level flight.
- ✓ Climbing/descending turns and in landing configuration
- ✓ Limited panel, stabilized climb or descents at Rate 1 turn onto given headings.
- ✓ Recovery from unusual attitudes.

EN-ROUTE IFR PROCEDURES

- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV
- ✓ Use of radio aids

- ✓ Level flight, control of heading, altitude and airspeed, power setting, trim technique
- ✓ Altimeter settings
- ✓ Timing and revision of ETAs (En-route hold -if required)
- ✓ Monitoring of flight progress, flight log, fuel usage, systems management
- ✓ ATC liaison and compliance. R/T procedures

APPROACH PROCEDURES

- ✓ Setting and checking of navigational aids, identification of facilities
- ✓ Arrival procedures, altimeter checks
- ✓ Approach and landing briefing, including descent/approach/landing checks
- ✓ Holding procedure
- ✓ Compliance with published approach procedure
- ✓ Altitude, speed heading control, (stabilized approach)
- ✓ Go-around action
- ✓ Missed approach procedure I landing
- ✓ ATC liaison -compliance, R/T procedures

Simulated asymmetric flight

- ✓ Simulated engine failure after take-off or on go-around]
- ✓ Asymmetric approach and procedural go-around
- ✓ Asymmetric approach and landing, missed approach procedure

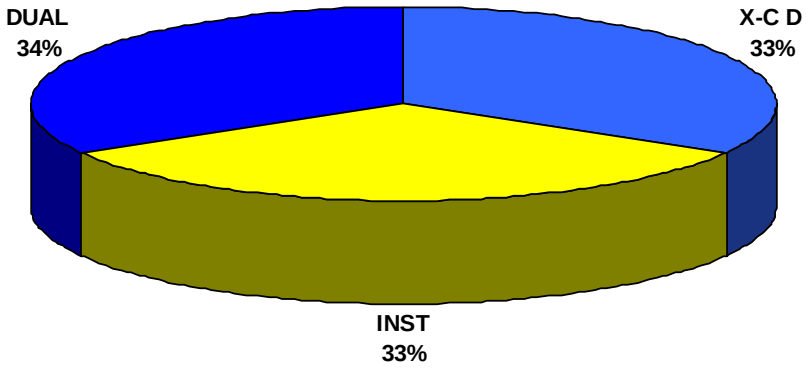
2.4 CPL(A) Modular Course

2.4.1 Course Structure

The flying training of CPL (A) modular course shall comprise a total of at least 25 hours for the applicants without an instrument rating including 10 hours of instrument instruction of which up to 5 hours may be instrument ground time in a FNPT II not including all flying tests.

For the applicants with a valid instrument rating shall be given at least 15 hours dual visual flight instruction not including all flying tests.

The air exersices of the course anylized in the following table:



	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1 Aircraft familiarization								2
Exercise 2 Flight preparation								2
Exercise 10A: Slow Flight	1							
Exercise 13: Circuit approach and landing	2							
	3	0	0	0	0	0	0	4
Exercise 16: Forced landing without power	1	0						
Exercise 17: Precautionary landing	1	0						
Exercise 18C Radio navigation			3					
Exercise 26 DUAL X-Country Triangle			7					
	2	0	10	0	0	0	0	0
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					2			
Exercise 31: Unusual Attitudes and Recovery					1			
Exercise 32 Use of Partial Panel					1			
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					2			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					2			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					2			
	0	0	0	0	10	0	0	0
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure	***2***						0	
Exercise 54: ASYMMETRIC POWER FLIGHT “Take-Off and Approach”	***3***						0	
	5	0	0	0	0	0	0	0
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**10**	**0**	**10**	**0**	**10**	**0**	**0**	**4**
Exercise 60 FINAL CHECK					**1**		**1**	

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Training Organization procedures Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Organization Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Flight Training Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 10A: Slow Flight

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student will be expected to control airspeed in all manoeuvres within ± 10 kts, heading within 10° and ± 50 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius
- ✓ Airmanship using flaps at low airspeeds

- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 13: Circuit approach and landing

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 16: Forced landing without power

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 26 DUAL X-Country Triangle

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 2-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. To introduce to the student the VFR routes.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

Note 2: The Student must be prepared for the following X-Country:

- ⇒ LGMG – ALEPOCHORI – GERMI – LARIMNA – AIDIPSOS – LGBL. LGBL – LGSK. LGSK – MADOUDI – PSACHNA – CHALKIS – OROPOS – MALAKASA – LIMNI – OAKA – XOLARGOS – LGAT – EGN – LGMG.
- ⇒ LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG OR LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG.
- ⇒ LGMG – DAPORI – KOR – IXONI – ARA – LGZA, LGZA – LGKF – MESSI – RIO – IXONI – KOR – DAPORI - LGMG

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure". The student must also be able to execute promptly and safely and without any hesitation emergency procedures like engine failure, electrical load failure, smoke and fire etc.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of lessons 18A, 18B, 18C

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)

Flight Lesson (Introduce) Air Exercise Radio Navigation

- ✓ Use of VHF Omni Range (USE SKOPELOS, ALMIROS,TANAGRA or ARA, DDM, KEA, ATV)
- ✓ Availability, AIP, frequencies

- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)
- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies (USE LGSK and EGN)
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

Note: Excluded from the syllabi of CPL modular in case the applicant is holder of a valid IR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

Note: The exercise is included only if the applicant is holder of a valid ICAO Multi Engine Piston Rating. In this case the exercise 26 is reduced to two hours.

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine

- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse

- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine
- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

Note: The exercise is included only if the applicant is holder of a valid ICAO Multi Engine Piston Rating. In this case the exercise 26 is reduced to two hours.

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

Exercise 60 FINAL CHECK

EXERCISE OBJECTIVE: The chief instructor, assistant chief, or a designated check instructor will evaluate the student's skills. This is the final stage test in preparation for the CPL(A) skill test. The review items may be performed with all engines operating or with one engine inoperative.

COMPLETION STANDARDS: The student will perform all VFR and pertinent simulated emergency procedures at the proficiency level, as outlined in Appendix 2 to JAR-FCL 1.170 (CPL (A) skill test).

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Use of flight manual
- ✓ Preparation of ATC flight plan. IFR flight plan/log

PRE-FLIGHT OPERATIONS AND DEPARTURE

- ✓ Use of checklist, airmanship, anti/de-icing procedures, etc., apply in all sections of the stage check
- ✓ Pre-flight inspection
- ✓ Weather Minima
- ✓ Taxiing
- ✓ Pre-take off briefing. Take off
- ✓ Transition to instrument flight
- ✓ Instrument departure procedures. Altimeter setting
- ✓ ATC liaison -compliance. R/T procedures

GENERAL HANDLING

- ✓ Control of the aeroplane by reference solely to instruments. Including:
- ✓ level flight at various speeds, trim
- ✓ Climbing and descending turns with sustained Rate 1 turn
- ✓ Recoveries from unusual attitudes. including sustained 45° bank turns and steep descending turns
- ✓ Recovery from approach to stall in level flight.
- ✓ Climbing/descending turns and in landing configuration
- ✓ Limited panel, stabilized climb or descents at Rate 1 turn onto given headings.
- ✓ Recovery from unusual attitudes.

EN-ROUTE IFR PROCEDURES

- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV
- ✓ Use of radio aids
- ✓ Level flight, control of heading, altitude and airspeed, power setting, trim technique

- ✓ Altimeter settings
- ✓ Timing and revision of ETAs (En-route hold -if required)
- ✓ Monitoring of flight progress, flight log, fuel usage, systems management
- ✓ ATC liaison and compliance. R/T procedures

APPROACH PROCEDURES

- ✓ Setting and checking of navigational aids, identification of facilities
- ✓ Arrival procedures, altimeter checks
- ✓ Approach and landing briefing, including descent/approach/landing checks
- ✓ Holding procedure
- ✓ Compliance with published approach procedure
- ✓ Altitude, speed heading control, (stabilized approach)
- ✓ Go-around action
- ✓ Missed approach procedure I landing
- ✓ ATC liaison -compliance, R/T procedures

Simulated asymmetric flight

- ✓ Simulated engine failure after take-off or on go-around]
- ✓ Asymmetric approach and procedural go-around
- ✓ Asymmetric approach and landing, missed approach procedure

2.5 ATPL (A) Modular Course

2.5.1 Course Structure

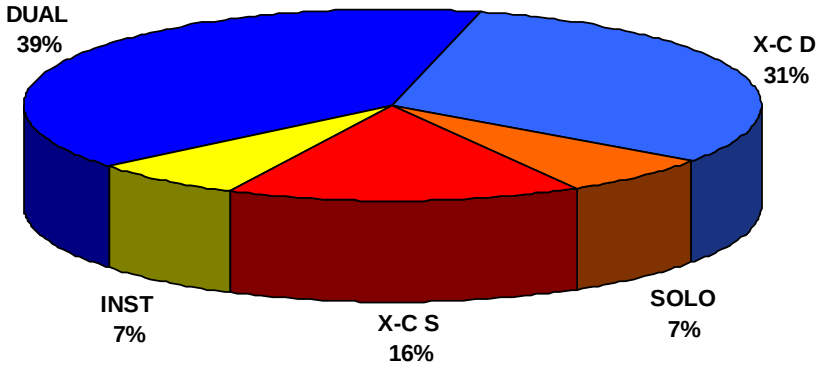
Not applicable

2.6 PPL(A) Course

2.6.1 Course Structure

The flying training of PPL(A) course shall comprise a total of at least 45 of which up to 5 hours may be instrument ground time in a FNPT II not including all flying tests.

The air exercises of the course are divided into 2 phases as analyzed in the following table:



PHASE 1	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1: Aircraft Familiarization and Preparation for Flight								2
Exercise 2: Preparation for and action after flight								2
Exercise 3: Air experience	1							
Exercise 4: Effects of controls – Attitudes and Movements	1							
Exercise 5: Taxiing and Ground Emmergencies	1							
Exercise 6: Straight and Level Flight	1							
Exercise 7: Climbing	1							
Exercise 8: Descending	1							
Exercise 9: Turning	1							
Exercise 10A: Slow Flight	1							
Exercise 10B: Stalls	1							
Exercise 11: Spin avoidance	1							
Exercise 12: Take-off and climb to downwind position	1,5							
Exercise 13: Circuit approach and landing	2							
Exercise 13E: Emergencies	1,5							
Exercise 14: Stage Check 1st SOLO	1	0,5						
	16	0,5	0	0	0	0	0	4
PHASE 2								
Exercise 16: Forced landing without power	1	1,5						
Exercise 17: Precautionary landing	1	1						
Exercise 18A: Introduction to Navigation			1					
Exercise 18B Navigation problems at lower levels and in reduced visibility			1					
Exercise 18C Radio navigation			1					
Exercise 19 Introduction to Instrument Flight					1			
Exercise 20 Local Area SOLO				2				
Exercise 19A: Basic Instruments – Pattern "A"					1			
Exercise 19b: Basic Instruments – Pattern "B"					1			
Exercise 21: Advancing to Navigation			4					
Exercise 25: X-Country SOLO				2				
Exercise 26 DUAL X-Country Triangle			7					
Exercise 27 SOLO X-Country Triangle 150 NM				3				
	2	2,5	14	7	3	0	0	0
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	18	3	14	7	3	0	0	4
Exercise 60 FINAL CHECK						1		

2.6.2 PHASE 1

OBJECTIVE: During this phase the student shall do exercises up to the first solo flight comprised a total of at least 15 hours dual flight instruction on a single engine aircraft.

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Training Organization Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Organization procedures Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Flight Training Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 3: Air experience

EXERCISE OBJECTIVE: The student will become familiar with the training airplane, its operating characteristics, flight controls, basic instruments and systems, pre-flight procedures, proper use of the checklist, and general good operating techniques and safety procedures. Instruction will be given in manoeuvring the airplane on the ground and in basic flight manoeuvres using the horizon (no the attitude indicator. Instructor must demonstrate all manoeuvres initially hiding ASI, VSI, etc). In flight training, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon. As basic flying skills are developed through training and experience, the pilot will acquire an awareness of these references.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the training airplane and safe operating techniques should be demonstrated.

Note: The notation (VR/IR) will be used throughout this syllabus to indicate the use of integrated instruction. Each new manoeuvre will be introduced by visual reference (VR) and attitude instrument reference (IR)

Flight Lesson

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Performing pre-flight line inspection to include required aircraft documents
- ✓ Correct use of the checklist
- ✓ Engine start and engine controls
- ✓ Radio communications on the ground and in flight
- ✓ Taxi -speed and directional control including use of brakes
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal takeoff
- ✓ Traffic pattern departure
- ✓ Local area familiarization which may include short point to point flight
- ✓ Straight and level flight (VR)
- ✓ Trim technique
- ✓ Medium banked turns (VR) and how to clear for traffic before turning
- ✓ Climbs (VR)
- ✓ Glides (VR)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane

Exercise 4: Effects of controls – Attitudes and Movements

EXERCISE OBJECTIVE: The student will become familiar with the controls of the aircraft and the effect of them during flight. Again, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be demonstrated.

Flight Lesson

- ✓ Primary effects when laterally level and when banked using the aileron and the rudder
- ✓ Effects of Airspeed and Power using the elevator during climb descend.
- ✓ Trimming controls (Nose attitude and then trim for straight and level, climb and descend)
- ✓ Flaps. Effects of Nose Attitude, Airspeed and Power
- ✓ Operation of Mixture control, Carburetor heat, Cabin heating/ventilation

Exercise 5: Taxiing and Ground Emergencies

EXERCISE OBJECTIVE: The student will be familiar with taxiing procedures normal and emergencies also with the aircraft parking area of the Global Air Services.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, without assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to taxi for take off and to the parking area after landing. The student shall be able to secure the airplane and fill the appropriate documents (tech log etc) by himself.

Flight Lesson

- ✓ Pre-taxi checks
- ✓ Starting, control of speed and stopping
- ✓ Engine handling
- ✓ Control of direction and turning
- ✓ Turning in confined spaces
- ✓ Parking area procedure and precautions
- ✓ Effects of wind and use of flying controls
- ✓ Effects of ground surface
- ✓ Freedom of rudder movement
- ✓ Marshalling signals
- ✓ Instrument checks
- ✓ Air traffic control procedures
- ✓ Emergencies
    - o Brake and steering failure

During the flight further training of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be given according to objectives of the Exercise 4 including demonstration of:

- ✓ Shallow turns
- ✓ Medium turns
- ✓ Steep turns
- ✓ Climb
- ✓ Descend
- ✓ Glides

Exercise 6: Straight and Level Flight

EXERCISE OBJECTIVE: The student will review and practice the four fundamentals forces of flight. Also, the student will be introduced further to climbing and throttle control, rudder control, and level off procedures. The student will perform communications, taxi and take-of rolls. Aircraft stability will be demonstrated to instil confidence and stress the importance of proper trim.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with no assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis performing climbs, descends and shallow – medium turns. A general understanding of the traffic pattern and landings techniques should be demonstrated.

Pre-flight Discussion and Briefing

(The pre-flight briefing will be performed by the student with the instructor assistance)

- ✓ Current and forecast weather/Notams
- ✓ Performance planning/weight and balance
- ✓ The Forces
- ✓ Longitudinal Stability and Control in Pitch
- ✓ Relationship of C of G to Control in Pitch
- ✓ Lateral and Directional Stability (Control of Lateral Level and Balance)
- ✓ Attitude and Balance Control Trimming
- ✓ Power Settings and Airspeeds
- ✓ Drag and Power Curves
- ✓ Range and Endurance

Flight Lesson

- ✓ Normal takeoff (performed by the student assisted by the instructor)
- ✓ Traffic pattern departure
- ✓ Normal climb (performed by the student assisted by the instructor)
- ✓ Straight and level at normal cruising power, attaining and maintaining straight and level flight (performed by the student without any assistance)
- ✓ Medium and steep turns (performed by the student assisted by the instructor)
- ✓ Glides (performed by the student assisted by the instructor)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane (performed by the student without any assistance)

Exercise 7: Climbing

EXERCISE OBJECTIVE: The student will review and practice the fundamentals of climb, turns, descend, glide, and turns in order to increase proficiency. The student also will perform takeoff assisted by the instructor.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to conduct all pre-flight operations and establish proper pitch attitude and power for climbs without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of the relationship between Power/Airspeed and Rate of Climb
- ✓ Maximum Rate of Climb (Vy) and Maximum Angle of Climb (Vx) (Effect of: Mass, Flaps and density Altitude)

Flight Lesson

- ✓ Use of checklist (performed by the students without any help)
- ✓ Pre-flight checks and engine start (performed by the students without any help)
- ✓ Radio communications (performed by the students without any help)
- ✓ Taxi (performed by the students without any help)
- ✓ Pre-takeoff checks (run-up) (performed by the students without any help)
- ✓ Normal takeoff (performed by the students without any help)
- ✓ Traffic pattern departure and entry (performed by the students assisted by the instructor)
- ✓ Straight and level (performed by the students without any help)
- ✓ Climbing (performed by the students without any help)
    - o Entry, maintaining the normal and max rate climb
    - o levelling off
    - o levelling off at selected altitudes
    - o Control in pitch, including use of trim
    - o En-route climb (cruise climb)
    - o climbing with flap down
    - o Maximum angle of climb
    - o Introduction to Slow Flight (ΒΑΠΕ – ΒΑΠΕ)
- ✓ Glides (performed by the students assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 8: Descending

EXERCISE OBJECTIVE: The student will demonstrate his ability to perform climbs and turns. The instructor will review descends and glides in order to increase student's proficiency. Also, the student will be introduced to combine rudder control and ailerons during S-turns (συνδυασμός πηδαλίων). A demonstration to slow flight (ΒΑΠΕ-ΒΑΠΕ) also will be repeated

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to perform without any assistance and establish proper pitch attitude and power for descends and glides. The student also will be able to perform Slow Flights and S-turns with the instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams (Performed by the student)
- ✓ Review performance planning/weight and balance (Performed by the student)
- ✓ Glide Descent Angle -Airspeed -Rate of Descent (Performed by the student)
- ✓ Effect of Flaps (Performed by the student)
- ✓ Effect of Wind (Performed by the student)
- ✓ Effect of Mass (Performed by the student)

Flight Lesson

- ✓ Use of checklist (Performed by the student)
- ✓ Pre-flight checks and engine start (Performed by the student)
- ✓ Radio communications (Performed by the student)
- ✓ Taxi (Performed by the student)
- ✓ Pre-takeoff checks (run-up) (Performed by the student)
- ✓ Normal takeoff (Performed by the student)
- ✓ Traffic pattern departure and entry (Performed by the student)
- ✓ Straight and level (Performed by the student)
- ✓ Climbs (Performed by the student)
- ✓ Descends and Glides (Performed by the student assisted by the instructor)
    - o Entry, maintaining and levelling off
    - o Levelling off at selected altitudes
    - o Glides
- ✓ Slow Flight (ΒΑΠΕ – ΒΑΠΕ) (Performed by the student assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 9: Turning

EXERCISE OBJECTIVE: The student will review and practice climb, descends and glide turns, to increase proficiency. Also, the student will review S-turns. The student will perform taxi and takeoff.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to establish proper pitch attitude and power for turns (climbing and descending) without instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Climbing and Descending Turns
- ✓ Turning onto Selected Headings -Use of Gyro Heading Indicator and Magnetic Compass

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)

Flight Lesson (Introduce) Air Exercise 9 Turning

- ✓ Entry and maintaining medium level turns
- ✓ Climbing turns
- ✓ Descending turns
- ✓ Turns onto selected headings, use of gyro heading indicator and compass
- ✓ Entry and maintaining steep turns

Exercise 10A: Slow Flight

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student will be expected to control airspeed in all manoeuvres within ± 10 kts, heading within 10° and ± 50 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius
- ✓ Airmanship using flaps at low airspeeds

- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 10B: Stalls

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce stalls.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Stall recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Characteristics of the Stall
- ✓ Angle of Attack
- ✓ The Effectiveness of the Controls at the Stall
- ✓ Factors Affecting the Stalling Speed:
    - o Effect of Flaps/Slats/Slots
    - o Effect of Power/Mass/C of G/Load Factor
    - o The Effects of Unbalance at the Stall
- ✓ The Symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Stalling & Recovery:
- ✓ Without Power
- ✓ With Power On
- ✓ With Flaps Down
- ✓ Stalling and Recovery at the Incipient Stage with 'Instructor Induced' Distractions

* Stalling & Recovery during manoeuvres involving more than 1 G (accelerated stalls, including, secondary stalls & recoveries). Consideration is to be given to manoeuvre limitations and references to The Owners/Flight manual or Pilot's Operating Handbook must also be made in relation to Mass and Balance limitations. These factors must also be covered in the next exercise spinning.

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level

- ✓ Climbs
- ✓ Descends
- ✓ Medium & steep turns
- ✓ Slow Flight

Flight Lesson (Introduce) Air Exercise 10 B Stalling

- ✓ Airmanship
- ✓ Safety checks (1A 5E)
- ✓ The symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Recovery without Power
- ✓ Recovery with Power
- ✓ Recovery when a Wing Drops at the Stall
- ✓ Stalling with Power 'ON' & Recovery
- ✓ Stalling with Flap 'Down' & Recovery
- ✓ Stalling with Power 'OFF' & Recovery
- ✓ Repetitive Stall

Exercise 11: Spin avoidance

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce spins.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Spin recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ SPIN RECOVERY at the INCIPIENT STAGE
- ✓ Causes, Stages, Autorotation and Characteristics of the Spin
- ✓ Recognition and Recovery at the Incipient Stage -entered from various flight attitudes Aeroplane
- ✓ Limitations
- ✓ Airmanship -Safety Checks
- ✓ SPIN RECOVERY at the DEVELOPED STAGE
- ✓ The Spin Entry
    - o Recognition & Identification of Spin Direction
    - o The Spin Recovery
    - o Use of Controls
    - o Effects of Power/Flaps (flap restriction applicable to type)
    - o Effect of the C of G upon spinning characteristics
    - o Spinning from Various Flight Attitudes
    - o Aeroplane Limitations
    - o Airmanship -Safety Checks
    - o Common Errors during Recovery

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 11A/ B Sinning

AIR EXERCISE 11 A SPIN RECOVERY at the INCIPIENT STAGE

- ✓ Aeroplane Limitations.
- ✓ Airmanship
- ✓ Safety Checks

- ✓ Recognition at the Incipient Stage of a Spin
- ✓ Recoveries from Incipient Spins entered from various attitudes with the Aeroplane in the Clean

AIR EXERCISE 11 B SPIN RECOVERY at the DEVELOPED STAGE - Aeroplane Limitations

- ✓ The Spin Entry
- ✓ Recognition & Identification of the Spin Direction the Spin
- ✓ Recovery (reference to Flight Manual)
- ✓ Effects of Power/Flaps (restrictions applicable to aeroplane type)

NOTE: Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.

Exercise 12: Take-off and climb to downwind position

EXERCISE OBJECTIVE: In addition to providing a review of manoeuvres previously presented, the student will be introduced to different climb and descent configurations and how to transition from one to the other. Loss of engine power emergency procedures during takeoff and climb out will also be introduced.

COMPLETION STANDARDS: The student should display, through performance and discussion, complete understanding of possible emergencies and procedures to use during takeoff. The student shall maintain airspeeds with increased awareness of impending stalls and positive coordinated control usage becoming more consistent. Configuration changes shall be accomplished with correct usage of throttle control and trim technique. Principles of aircraft control during landing should be understood.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Handling- Factors affecting the length of Take-off Run and Initial Climb
    - o The Correct Lift Off Speed, use of Elevators (Safeguarding the Nose Wheel), Rudder and Power
    - o Effect of Wind (including Crosswind Component)
    - o Effect of Flaps (including the Decision to Use and the Amount Permitted)
    - o Effect of Ground Surface and Gradient upon the Take-off Run
    - o Effect of Mass, Altitude and Temperature on Take-off and climb Performance
    - o Pre Take-Off Checks
    - o Air Traffic Control Procedure (before Take-Off)
    - o Drills, during and after Take-off
    - o Short/Soft Field Take-Off Considerations/Procedures
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Airmanship and Air Traffic Control Procedures

Flight Lesson (Review)

- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 12 Take-off and landing to downwind position

- ✓ Pre Take-Off Checks
- ✓ Into Wind Take-Off
- ✓ Crosswind Take-Off
- ✓ Drills During and After Take-Off

- ✓ Short Take-Off and Soft Field Procedure/Techniques (including Performance Calculations)

Exercise 13: Circuit approach and landing

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 13E: Emergencies

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce procedures to employ during partial or complete loss of power while on any leg of the traffic pattern.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing (unassisted). Safe control of approach and landing following simulated loss of power on downwind will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Wake Turbulence Awareness
    - o Wind shear Awareness
    - o Airmanship and Air Traffic Control Procedures
    - o Mislanding/Go around
    - o Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Emergencies

- ✓ Aborted Take-Off
- ✓ Engine Failure after Take-Off
- ✓ Glide Approach (High Altitude Engine Failure and Emergency Landing)
- ✓ Miss-landing/go-around

Exercise 14: Stage Check 1st SOLO

EXERCISE OBJECTIVE: The objective of this flight is to determine if the student possesses a working knowledge of regulations and safe operating procedures, as well as the competency to pilot an aircraft in solo flight.

COMPLETION STANDARDS: The student shall demonstrate the knowledge and skill to perform the listed manoeuvres and procedures and for continued solo flight in the local training area. The following standards will apply:

- ✓ Hold attitude to within ±200 feet of assigned
- ✓ Hold heading to within ±15° of assigned
- ✓ Maintain airspeed to within ±10 kts of desired
- ✓ Recognition of stalls with prompt, positive recovery
- ✓ Safe traffic patterns exercising collision avoidance techniques
- ✓ Demonstrate the ability to execute safe takeoff and landings
- ✓ Safely handle emergency situations presented with no loss of control

Pre-flight Discussion and Briefing - Oral Examination

- ✓ Test knowledge of aircraft
- ✓ Test knowledge of JAR-FCL flight rules which are pertinent to student solo flights
- ✓ Test knowledge and awareness of good operating practices

Stage Check Flight Test

- ✓ Extensive pre-flight, engine start and run-up
- ✓ Taxiing
- ✓ Normal/crosswind takeoff and departure
- ✓ Turns
- ✓ Climbs
- ✓ Glides
- ✓ Slow flight
- ✓ Stall -power off
- ✓ Stall -power on
- ✓ Collision avoidance procedures
- ✓ Traffic pattern operations
- ✓ Normal/crosswind approach and landing
- ✓ Simulated loss of engine power shortly after takeoff and while on downwind
- ✓ Use of Checklist
- ✓ Parking
- ✓ Engine shut down and securing airplane

2.6.3 PHASE 2

OBJECTIVE: During this phase the student shall do exercises up to the first solo cross-country flight comprise a total of at least 15 hours of dual flight instruction and at least 20 hours solo flight on a single-engine aeroplane.

Exercise 16: Forced landing without power

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18A: Introduction to Navigation

EXERCISE OBJECTIVE: To re-familiarize the student with the local practice area and to improve proficiency with more advanced manoeuvres in preparation for local area solo practice flights. The student will be instructed in the planning and conducting of cross-country flights using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o map selection and preparation, choice of route, controlled airspace
    - o danger, prohibited and restricted areas, safety altitudes
    - o calculations, magnetic heading(s) and time(s) en-route, fuel consumption
    - o mass and balance, mass and performance
    - o flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
    - o aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
    - o Departure
    - o organisation of cockpit workload
    - o departure procedures
    - o altimeter settings
    - o ATC liaison in controlled/regulated airspace
    - o setting heading procedure
    - o noting of ETAs
    - o maintenance of altitude and heading
    - o revisions of ETA and heading
    - o log keeping
    - o use of radio, use of navaids
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o transiting controlled/regulated airspace
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ departure procedures, altimeter settings
- ✓ ATC liaison in controlled/regulated airspace
- ✓ setting heading procedure, noting of ETAs, maintenance of altitude and heading
- ✓ revisions of ETA and heading
- ✓ log keeping
- ✓ use of radio, use of navaids
- ✓ minimum weather conditions for continuation of flight, in-flight decisions
- ✓ diversion procedures
- ✓ uncertainty of position procedure
- ✓ lost procedure
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o altimeter setting
    - o entering the traffic pattern
    - o circuit procedures

Exercise 18B Navigation problems at lower levels and in reduced visibility

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce navigation problems at lower levels and in reduced visibility.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing. Safe control of aircraft and correct decision making at lower levels and in reduced visibility will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o actions prior to descending
    - o hazards (e.g. obstacles, and terrain)
    - o difficulties of map reading
    - o effects of wind and turbulence
    - o avoidance of noise sensitive areas
    - o joining the circuit
    - o bad weather circuit and landing

Flight Lesson (Review)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Navigation problems at lower levels and in reduced visibility
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Actions Prior to Descending
    - o Effects of Wind and Turbulence

- Hazards of operating at low levels
- Low Cloud and Good Visibility
- Low Cloud and Poor Visibility
- Avoidance of Moderate to Heavy Rain Showers
- Effects of precipitation (forward visibility)
- bad weather circuit and landing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight

- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 20 Local Area SOLO

EXERCISE OBJECTIVE: To develop student's confidence and proficiency through area solo practice of assigned manoeuvres

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: First area solo: The instructor must be on the tower in order to supervise the take-off, land and student's communications. The flight will be performed at the DAPORI – AIGINA area or LGMG – ALEPOCHORI - ALKYON.

Pre-flight Discussion and Briefing

- ✓ Pre X-Country Solo written test passed
- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson Area solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (with the minimum assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
- ✓ departure procedures
- ✓ ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19b: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 21: Advancing to Navigation

EXERCISE OBJECTIVE: To re-familiarize with dispatch procedures, pre-flight planning, post flight requirements, and to the student's proficiency in cross-country planning procedures. The student must be prepared in order to conduct a cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment. A very good review also in the emergency landings and emergency procedures will be performed in order to develop the ability to take proper action in emergency situations.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: The flight will be performed at the IKAROS - KOPAIDA area. Forced – emergency landings will be performed at IKAROS or KOPAIDA and returning on the airport (Megara) at 2500 to 3500 feet.

Note 3: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (with minimum assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student is able to determine position (with assistance) in the practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern. The student also must be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course making the appropriate radio communications. The student should be competent in navigating by means of pilotage, dead reckoning, VOR, and / or ADF, and when so instructed, is able to accurately plan and fly a diversion to an alternate airport. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure".

Note 3: The student has to be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should also be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Selection of forced landing areas
    - o Provision for change of plan
    - o Gliding distance -consideration
    - o Planning the descent Key positions
    - o Engine failure checks

- Use of radio -R/T 'Distress' Procedure
- The base leg
- The final approach
- Go around
- The landing considerations
- Actions after landing -Aeroplane security
- Causes of engine failure

✓ Advancing to QDM Meaning and Use (VOR/ADF)

Considerations are to be given to airplane performance, Mass & Balance and NAV Log calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

✓ Normal / crosswind takeoff and landing
✓ Short/Soft field takeoff and landing
✓ Traffic pattern departure and entry
✓ Compass turns
✓ NDB & VOR Homing
✓ Position determination on the map using VOR & NDB
✓ Dead reckoning pilotage
✓ Forced Landing Procedures
✓ Selection of Landing Area
✓ Gliding Distance Considerations
✓ Planning the descent:
- Key Positions
- Engine Failure Checks
- Engine cooling precautions

✓ Use of Radio
✓ The Base Leg
✓ The Final Approach
✓ The Landing } When the Exercise is
Actions after Landing } conducted at an
Aeroplane Security } Aerodrome
✓ Airmanship

Exercise 25: X-Country SOLO

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two hours day cross-country flight. The student must be well prepared in order to conduct a SOLO cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG or LGMG – ALEPOCHORI – GERMI – LARIMNA - MANTOUDI – SKIATHOS and reverse route or LGMG – DAPORI – KOR – IXONI – RIO- MESSI – RIO - IXONI – KOR – DAPORI or LGMG – DAPORI – EGN – YDRA – LGPH – YDRA – EGN - DAPORI.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep time using map time-lines and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Opening and closing VFR flight plan, Procedure at unfamiliar airports
- ✓ Emergencies, Pre X-Country Solo written test passed
- ✓ Review objectives of lesson 18A (Navigation)

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson X-Country solo

- ✓ map selection and preparation, choice of route, controlled airspace
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ NAV log completion (without any assistance)
- ✓ mass and balance, mass and performance
- ✓ flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
- ✓ aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
- ✓ Departure
    - o departure procedures
    - o ATC liaison in controlled/regulated airspace
- ✓ noting of ETAs, log keeping
- ✓ use of radio, use of navaids
- ✓ transiting controlled/regulated airspace

- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o entering the traffic pattern
    - o circuit procedures
- ✓ Other manoeuvres assigned by the instructor

Exercise 26 DUAL X-Country Triangle

(At least 1,5 hours preparation is required)

EXERCISE OBJECTIVE: To improve the student's proficiency in cross-country operations through the planning, plotting, and flying a dual 2-hour's day cross-county flight, with landings at two unfamiliar airports. To improve the student's competence in navigating by means of VOR and ADF; and to further develops the ability to take proper action in emergency situations. To introduce to the student the VFR routes.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (without assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

Note 2: The Student must be prepared for the following X-Country:

- ⇒ LGMG – ALEPOCHORI – GERMI – LARIMNA – AIDIPSOS – LGBL. LGBL – LGSK. LGSK – MADOUDI – PSACHNA – CHALKIS – OROPOS – MALAKASA – LIMNI – OAKA – XOLARGOS – LGAT – EGN – LGMG.
- ⇒ LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG OR LGMG – EGN – POROS – KEA – LGSO. LGSO – LGMK or LGNX. LGMK (or LGNX) – LGSO – KEA – POROS – EGN – LGMG.
- ⇒ LGMG – DAPORI – KOR – IXONI – ARA – LGZA, LGZA – LGKF – MESSI – RIO – IXONI – KOR – DAPORI - LGMG

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure". The student must also be able to execute promptly and safely and without any hesitation emergency procedures like engine failure, electrical load failure, smoke and fire etc.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of lessons 18A, 18B, 18C

Flight Lesson (Review)

- ✓ Organization of Cockpit Workload and flight preparation
- ✓ Departure Procedures (Altimeter & Transponder setting, comms etc)
- ✓ Enroute Procedures (Maintenance of Altitudes and Headings, Revisions to ETA and Heading, Log Keeping etc)
- ✓ Arrival Procedures (Entering the Traffic Pattern, comms etc)

Flight Lesson (Introduce) Air Exercise Radio Navigation

- ✓ Use of VHF Omni Range (USE SKOPELOS, ALMIROS,TANAGRA or ARA, DDM, KEA, ATV)
- ✓ Availability, AIP, frequencies

- ✓ Selection and identification
- ✓ Omni bearing selector (OBS)
- ✓ To/from indications, -orientation
- ✓ Course deviation indicator (CDI)
- ✓ Determination of radial
- ✓ Intercepting and maintaining a radial
- ✓ VOR passage
- ✓ Obtaining a fix from two VORs
- ✓ Use of automatic direction finding equipment (ADF) non-directional beacons (NDBs)
- ✓ Availability, AIP, frequencies (USE LGSK and EGN)
- ✓ Selection and identification
- ✓ Orientation relative to the beacon
- ✓ Obtaining a QDM and homing

Exercise 27 SOLO X-Country Triangle 150 NM

(At least 2 hours preparation is required)

EXERCISE OBJECTIVE: To further develop the student's competence in cross-country solo operations through the planning and flying of a solo two and half hours day cross-country flight with landings at two unfamiliar airports. To improve the student's proficiency in navigating by means of pilotage, dead reckoning, VOR, and / or ADF; and to further increase the student's confidence and ability to properly handle unexpected flight situations.. The student must be well prepared in order to conduct a SOLO cross-country with full stop landing at different airpots as in exercise 26 instructed.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: Complete NAV Log will be filled without any assistance. During the flight the student will keep notes for ETA, fuels etc in the appropriate columns of NAV-Log and continuously will estimate the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student is able to plan, plot and fly the cross-country flight as assigned by the instructor and completed the post flight critique. The instructor should determine how well the flight was conducted through oral questioning and grading of the navigation log.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review objectives of lessons 18A, 18B, 18C, 19
- ✓ Planning and plotting course, Preparing navigation log
- ✓ Opening and closing VFR flight plan
- ✓ Procedure at unfamiliar airports
- ✓ Emergencies

2.7 Instrument Rating IR(A) Course

2.7.1 Course Structure

The flying training of modular IR(A) course consists of two modules, which may be taken separately or combined:

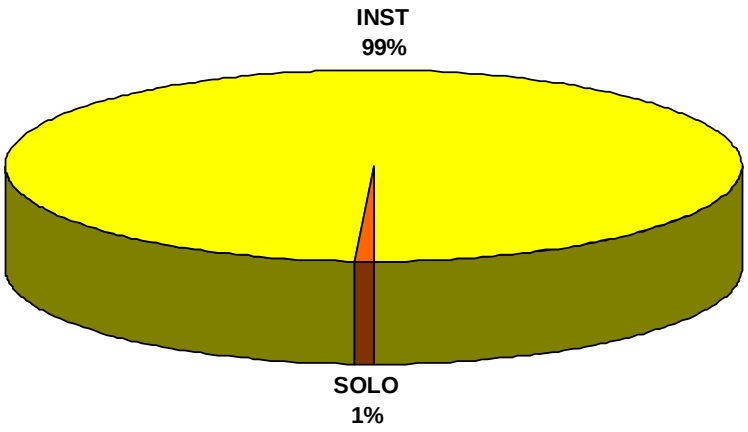
Basic Instrument Flight Module:

This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in FNPT II.

Procedural Instrument Flight Module:

This comprises the remainder of the training syllabus for the IR(A), 40 hours single-engine instrument time under instruction of which up to 35 hours can be instrument ground time in FNPT II. In case the applicant is holder of MEP rating and fulfil the requirements of JAR-FCL 1.261(b)(2), five more hours instrument time under instruction are needed on a multi-engine aeroplane according to JAR-FCL 1.205(b).

The air exercises of the course are analyzed in the following table:



BASIC INSTRUMENT FLIGHT MODULE	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 19 Introduction to Instrument Flight					1			3
Exercise 19A: Basic Instruments – Pattern "A"					1,5			
Exercise 19b: Basic Instruments – Pattern "B"					1,5			
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					1			
Exercise 31: Unusual Attitudes and Recovery					1			
Exercise 32 Use of Partial Panel					1			
Exercise 18C Radio navigation					3			
	0	0	0	0	10	0	0	0
PROCEDURAL INSTRUMENT FLIGHT MODULE								3
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					2			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					2			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					2			
Exercise 36: VOR Non - Precision Approach Procedure					4			
Exercise 37: NDB Non - Precision Approach Procedure					4			
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures					6			
Exercise 39: Precision Approach Procedure					6			
Exercise 40: Long IR X-Country					9,5			
Exercise 42: Night Rating		0,5			4,5			
	0	0,5	0	0	40	0	0	0
MULTI-ENGINE TRAINING IR								
Exercise 55: IR – Multi Engine Piston - Emmergencies					5			
	0	0	0	0	5	0	0	0
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**0**	**0,5**	**0**	**0**	**55**	**0**	**0**	**6**
Exercise 60 FINAL CHECK					**1**		**1**	

2.7.2 Basic Instrument Flight Module

OBJECTIVE: This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in a FNPT II, (AMC FCL 1.205). Upon completing the Basic Instrument Flight Module under the supervision and to the satisfaction of the Head of Training, the candidate shall be issued a Course Completion Certificate according to Appendix 1 to AMC FCL 1.205.

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19b: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

2.7.3 Procedural Instrument Flight Module

OBJECTIVE**:** This comprises 10 hours of instrument time under instruction, of which up to 5 hours can be instrument ground time in a FNPT II, (AMC FCL 1.205). Upon completing the Basic Instrument Flight Module under the supervision and to the satisfaction of the Head of Training, the candidate shall be issued a Course Completion Certificate according to Appendix 1 to AMC FCL 1.205.

This comprises the remainder of the training syllabus for the IR(A), 40 hours single-engine or 45 hours multi-engine instrument time under instruction. An applicant for the Procedural Instrument Flight Module, who does not hold a CPL(A), shall be holder of a Course Completion Certificate for the Basic Instrument Flight Module. Prior to commencing the Procedural Instrument Flight Module the GLOBAL AIR SERVICES shall ensure the competence of the applicant in basic Instrument flying skills. Refresher training shall be given as required.

The GLOBAL AIR SERVICES (GR-FTO-002) shall also ensure that the applicant for a multi-engine IR(A) course who has not held a multi-engine aeroplane class or type rating has received the multi-engine training specified in JAR-FCL 1.261(b)(2) prior to commencing the flight training for IR(A) course.

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 36: VOR Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures VOR Approaches.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGTG approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including DME ARC at LGTG approach
- ✓ Initial Approach to the VOR
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The Inbound Procedure
- ✓ Re-Check of Identification Code and Altimeter Setting

- ✓ The Final Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 37: NDB Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures NDB Approaches.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGSK approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Pre-flight Discussion Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including VOR HOLDING at SKP and approach to LGSK
- ✓ Initial Approach to the NDB
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The NDB Inbound Procedure

- ✓ Re-Check of Identification Code and Altimeter Setting
- ✓ The Final NDB Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a IR x-country flight. To also review to the student the non-precision approaches procedures NDB and VOR Approaches. The student must be prepared for IR flight to LGSK or LGZA or LGKF or LGMK (full stop) and IR departure to LGMG.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Note: The recommended minimum will be completed in more than one sortie

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation), AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 39: Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a x-country flight.

Note 1: The recommended minimum may be completed in more than one sortie

Note 2: In the first flight use the nearest ILS's LGAV (A prior ATC approval is required to be obtained by the instructor for ILS approach without landing), LGTG or LGEL. For the next flights use LGTS without full stop landing (If a full stop landing is performed the student will be charged the landing fees) or LGPZ.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Precision Approach Charts
- ✓ Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ Navaid Requirements, e.g. Radar, ADF, etc.
- ✓ Communication (ATC Liaison and R/T Phraseology)

Review:

- ✓ Holding Procedure
- ✓ The Final Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Completion of Aerodrome Approach Checks
- ✓ Initial Approach Procedure
- ✓ Selection of the ILS Frequency and Identification of Coding
- ✓ Operating Minima
- ✓ Achieving the Horizontal and Vertical Patterns
- ✓ Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix to the
- ✓ Use of DME {as applicable)
- ✓ Go Around arid Missed Approach Procedure
- ✓ Review of the Published Instructions

Flight Lesson Introduce Air Exercise Precision Approach Procedure

- ✓ Initial Approach to the ILS
- ✓ Holding Procedure
- ✓ Frequency Selection and Identification of ILS
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ Communication {ATC Liaison and R/T Phraseology)
- ✓ Determination of Operating Minima and Altimeter Setting
- ✓ ILS Entry Methods
- ✓ Radar Vectors

- ✓ The Descent Rate on Final Approach
- ✓ Maintaining the Localizer and Glide Path
- ✓ Decision Height
- ✓ Missed Approach Procedure

Exercise 40: Long IR X-Country

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a long IR x-country flight. The student must be prepared for IR flight and DME ARC to LGIR and ILS approach to LGRP.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives.

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation)
- ✓ AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials, etc.
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position .Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 42: Night Rating

EXERCISE OBJECTIVE: To develop the student's ability to make solo night flights in the local practice area and airport traffic pattern. To familiarize the student with such aspects of night operations as: night vision, night orientation, and judgment of distance, use of cockpit lights, position lights, landing lights, and night emergency procedures

COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Night vision and vertigo
- ✓ Orientation in local area
- ✓ Judgment of distance
- ✓ Aircraft lights
- ✓ Airport lights
- ✓ Taxi technique
- ✓ Takeoff and landing technique
- ✓ Collision avoidance
- ✓ Unusual attitude recovery
- ✓ Emergencies

Flight Lesson Dual Basic Night Flying

- ✓ Start up procedures
- ✓ Local procedures -including ATC liaison
- ✓ Taxiing
- ✓ Parking area and taxiway lighting
- ✓ Judgment of speed and distances
- ✓ Use of taxiway lights
- ✓ Avoidance of hazards -obstruction lighting
- ✓ Instrument checks
- ✓ Holding point -lighting procedure
- ✓ Initial familiarization at night
- ✓ Local area orientation
- ✓ Significance of lights on other aircraft
- ✓ Ground obstruction lights
- ✓ Division of piloting effort -external/instrument reference

- ✓ Aerodrome lighting -Approach and runway lighting (including VASI and PAPI)
- ✓ Threshold lights
- ✓ Approach lighting
- ✓ Visual approach slope indicator systems

NIGHT CIRCUITS

- ✓ Line up
- ✓ Visual references during the take-off run
- ✓ Transfer to instruments
- ✓ Establishing the initial climb
- ✓ Use of flight instruments
- ✓ Instrument climb and initial turn
- ✓ The circuit
- ✓ Aeroplane positioning -reference to runway lighting
- ✓ The traffic pattern and lookout
- ✓ Initial approach and runway lighting demonstration
- ✓ Aeroplane positioning
- ✓ Changing aspect of runway lights and VASI (or PAPI). Intercepting the correct approach path
- ✓ Positioning, base leg and final approach
- ✓ Use of landing lights
- ✓ The flare and touchdown
- ✓ The roll out
- ✓ Turning off the runway -control of speed
- ✓ Missed approach. Use of instruments - Re-positioning in the circuit pattern

NIGHT NAVIGATION

- ✓ Particular emphasis on flight planning
- ✓ Selection of ground features visible at night
- ✓ Effect of cockpit lighting on map colours
- ✓ Use of radio aids
- ✓ Effect of moonlight upon visibility at night
- ✓ Emphasis on maintaining a 'minimum safe altitude'
- ✓ Alternate aerodromes -restricted availability
- ✓ Restricted recognition of weather deterioration
- ✓ Lost procedures

NIGHT EMERGENCIES

- ✓ Radio failure
- ✓ Failure of runway lighting
- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
- ✓ Failure of aeroplane navigation lights
- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure

Exercise 55: IR – Multi Engine Piston - Emergencies

Exercise 55 is included to the modular IR syllabi only in case the applicant is holder of a valid multi engine piston rating in order to gain IR/SP/ME.

EXERCISE OBJECTIVE: REVIEW ALL IR ASPECTS. During this session, the student will review procedures and manoeuvres that require additional practice from the prior single engine IR lessons. The student should gain additional proficiency in instrument flight operations during a planned cross-country flight. The applicant will be introduced to engine-out manoeuvres and procedures during simulated instrument flight.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: At the completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight and level flight. The student will demonstrate the newly introduced manoeuvres and procedures using correct operating techniques, coordination, smoothness, and understanding. During engine-out operations, the applicant will be able to make decisions concerning the continued safety of the flight and readily identify the inoperative engine and likely problems. The applicant will exhibit proficiency to engine-out manoeuvres and procedures during simulated instrument flight

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson Review

- ✓ Engine failure during ALL engines approach or missed approach

Instrument flying on asymmetric power

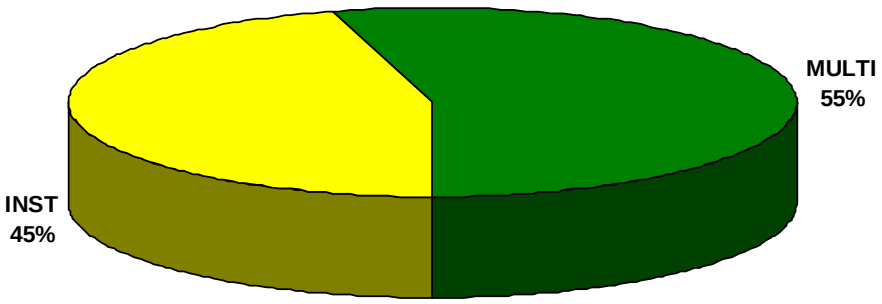
- ✓ Flight instrument checks and services available
- ✓ Straight and level flight
- ✓ Climbing and descending
- ✓ Standard rate turns
- ✓ Level, climbing and descending turns including turns onto pre selected headings
- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV (use SKP – LGSK and TGG - LGTG)
- ✓ Procedure Turns
- ✓ Holding Procedures
- ✓ Engine failure during approach

2.8 Single Pilot Multi Engine Piston Rating SP/ME(A) Course

2.8.1 Course Structure

The aim of the MEP(A) flying training course is to train pilots to the level of proficiency necessary to operate single pilot multi engine aeroplanes. The flying training in Global Air Services shall comprise a total of 6 hours in a single pilot multi engine aeroplane, not including all flying tests, including 2,5 hours basic visual maneuvers and 3,5 emergencies and asymmetric flight.

The air exercises of the course are analyzed in the following table:



PHASE 4 - MULTI-ENGINE TRAINING								
Exercise 50: Introduction to Multi Engine Principles								6
Exercise 51: Take-Off and Climb							1	
Exercise 52: Straight and Level Flight - Descend							1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure							2	
Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"							2	
Exercise 55: IR – Multi Engine Piston - Emmergencies					5			
	0	0	0	0	5	0	6	6
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**0**	**0**	**0**	**0**	**5**	**0**	**6**	**6**
Exercise 60 FINAL CHECK					**1**		**1**	

Exercise 50: Introduction to Multi Engine Principles

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on multi-engine aerodynamics, operating procedures, systems, and performance considerations. The applicants will learn to accurately use performance charts and compute weight and balance data to control the weight and balance conditions of the multi-engine airplane. In addition the students will learn principles, techniques, and procedures which apply to engine-out and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: This lesson will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of multi-engine flying principles.

AIR LEGISLATION

- ✓ Aeroplane performance group definitions (JAA)

PRINCIPLES OF FLIGHT-THE PROBLEMS

- ✓ Asymmetry Control
- ✓ Performance
- ✓ failed engine propeller drag
- ✓ Total drag increase
- ✓ Asymmetry of lift
- ✓ Effect of yaw in level and turning flight
- ✓ Thrust and rudder side force couples
- ✓ Effect on moment arms

CONTROL IN ASYMMETRIC POWER FLIGHT

- ✓ Use, misuse and limits of:
  - o Rudder
  - o Aileron
  - o Elevators
- ✓ Effect of bank/sideslip/balance
- ✓ Decrease of aileron/rudder effectiveness
- ✓ foot loads and trimming

MINIMUM CONTROL AND SAFETY SPEEDS

- ✓ Minimum control speed (Vmc)
- ✓ Factors affecting (Vmc)
- ✓ Landing gear
- ✓ Flaps
- ✓ Cowl flaps/cooling gills
- ✓ Pilot reaction/competence
- ✓ banking towards the operating engine
- ✓ feathering

- ✓ Critical engine
- ✓ Take-off safety speed
- ✓ Definition/origin of v2

AEROPLANE PERFORMANCE -ONE ENGINE INOPERATIVE

- ✓ Effect on excess power available
- ✓ Single-engine ceiling
- ✓ cruising, range and endurance acceleration/deceleration
- ✓ zero thrust, definition and purpose

PROPELLERS

- ✓ Variable pitch -general principles
- ✓ Feathering/unfeathering mechanism and limitations

SPECIFIC AEROPLANE TYPE AEROPLANE AND ENGINE SYSTEMS

- ✓ Operation normal.
- ✓ operation abnormal
- ✓ emergency procedures

LIMITATIONS –AIRFRAME

- ✓ load factors
- ✓ Landing gear/flap limiting speeds (Vlo and Vfe)
- ✓ Maximum speeds (Vno and Vne)

Limitations – ENGINE

- ✓ Rpm and manifold pressure
- ✓ Oil temperature and pressure
- ✓ Emergency procedures

MASS AND BALANCE

- ✓ To be covered in conjunction with the flight/owner's manual/pilot's operating handbook}

MASS AND PERFORMANCE

- ✓ (To be covered in conjunction with the flight/owner's manual/pilot's operating handbook) calculations for specific aeroplane type (all engines operating)
- ✓ Take-off run
- ✓ Take-off distance
- ✓ accelerate/stop distance
- ✓ landing distance
- ✓ landing run
- ✓ Take-off/climb out flight path
- ✓ Calculations for specific aeroplane type (one engine operating}
- ✓ landing distance

- ✓ landing run

Exercise 50A: Introduction to Avidyne Entegra Glass Cockpit

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on Avidyne Entegra glass cockpit system. The lesson is based on a CBT course which has been developed by FLIGHT 1 EUROPE LTD in co-operation with Avidyne, and has been designed to familiarize and train the students to efficiently operate the Entegra EXP500 PFD, MFD of the PA-44.

COMPLETION STANDARDS: At the conclusion of each lesson, student comprehension is measured by means of a multiple choice test. During the flight scenarios, the student demonstrates his or her grasp of the material by correctly selecting the appropriate PFD function(s),

INTRODUCTION

- ✓ Course overview
- ✓ Cautions VFR – IFR usage

EXP500 SYSTEM OVERVIEW

OPERATING THE EXP500

FEALURE MODES

Exercise 51: Take-Off and Climb

EXERCISE OBJECTIVE: During the lesson the student will become acquainted with the training airplane. The student should learn the attitudes, power settings, and configurations required for the performance of the listed manoeuvres and procedures using visual references.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations with a minimum of instructor assistance. The applicant will demonstrate the knowledge of attitudes, power settings, and configurations necessary to perform the listed manoeuvres and procedures by maintaining Altitude ± 200 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing

- ✓ Pre- Taxiing area precautions
- ✓ Greater mass -greater inertia
- ✓ Effect of differential power
- ✓ Precautions on narrow taxiways

PRE TAKE-OFF PROCEDURES

- ✓ Engine power checks
- ✓ Pre take-off checks c instructor's briefing to cover the procedure - to be followed should an emergency occur during take-off, e.g. engine failure

THE TAKE-OFF AND INITIAL CLIMB

- ✓ Factors affecting the length of the take-off run/distance
- ✓ Correct lift-off speed
- ✓ Importance of safety speed
- ✓ Crosswind take-off, considerations and procedures
- ✓ Short field take-off, considerations and procedures
- ✓ Engine handling after take-off, throttle/pitch/engine synchronization

CLIMBING

- ✓ Airmanship considerations
- ✓ Pre-climbing checks
- ✓ Engine considerations
- ✓ Use of throttle/pitch controls
- ✓ Maximum rate of climb speed
- ✓ Maximum angle of climb speed
- ✓ Synchronizing the engines

Exercise 52: Straight and Level Flight - Descend

EXERCISE OBJECTIVE: During this lesson, the student will review manoeuvres from the previous lesson. The student will be introduced to stalls, slow flight, steep turns and emergency operations to become familiar with the flight characteristics of the multi-engine aircraft.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations without instructor assistance. During take off and landing, the applicant will demonstrate good directional control and maintain lift off, climb, approach, and touchdown airspeed ±10 knots of the correct speed. Straight and level flight, climbs, and descends will be performed while maintaining assigned airspeed ±10 knots, roll-outs from turns ± 10º of assigned heading, and specified altitude ± 150 feet. The student will be able to demonstrate the correct flight procedures for manoeuvring during slow flight, steep turns, emergency descends, and the correct entry and recovery procedures for stalls. Slow flight manoeuvres and stalls must be completed no lower than 3,000 feet AGL or the manufacturers recommended altitude, whichever is higher.

STRAIGHT AND LEVEL FLIGHT

- ✓ Selections of power -throttle/pitch controls and Engine synchronization
- ✓ Fuel consumption aspects
- ✓ Use of trimming controls
- ✓ Operation of flaps (effect on pitch attitude, effect on airspeed)
- ✓ Operation of landing gear (effect on pitch attitude, effect on airspeed)
- ✓ Use of mixture controls
- ✓ Use of alternate air/carburetor heat controls
- ✓ Operation of cowl flaps/cooling gills
- ✓ Use of cabin ventilation and heating systems

DESCENDING

- ✓ Pre-descent checks
- ✓ Selection of throttle/pitch controls
- ✓ Engine cooling considerations

TURNING

- ✓ Medium turns
- ✓ Climbing/descending
- ✓ Steep turns (45 degrees of bank or more)

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine
- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse
- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine

- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

Exercise 60 FINAL CHECK

EXERCISE OBJECTIVE: The chief instructor, assistant chief, or a designated check instructor will evaluate the student's skills. This is the final stage test in preparation for the SP/MEP(A) skill test. The review items may be performed with all engines operating or with one engine inoperative.

COMPLETION STANDARDS: The student will perform all VFR as well as pertinent simulated emergency procedures at the proficiency level.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Use of flight manual
- ✓ Preparation of ATC flight plan. IFR flight plan/log

PRE-FLIGHT OPERATIONS AND DEPARTURE

- ✓ Use of checklist, airmanship, anti/de-icing procedures, etc., apply in all sections of the stage check
- ✓ Pre-flight inspection
- ✓ Weather Minima
- ✓ Taxiing
- ✓ Pre-take off briefing. Take off
- ✓ Transition to instrument flight
- ✓ Instrument departure procedures. Altimeter setting
- ✓ ATC liaison -compliance. R/T procedures

GENERAL HANDLING

- ✓ Control of the aeroplane by reference solely to instruments. Including:
- ✓ level flight at various speeds, trim
- ✓ Climbing and descending turns with sustained Rate 1 turn
- ✓ Recoveries from unusual attitudes. including sustained 45° bank turns and steep descending turns
- ✓ Recovery from approach to stall in level flight.
- ✓ Climbing/descending turns and in landing configuration
- ✓ Limited panel, stabilized climb or descents at Rate 1 turn onto given headings.
- ✓ Recovery from unusual attitudes.

EN-ROUTE IFR PROCEDURES

- ✓ Tracking, including interception, e.g. NDB, VOR, RNAV
- ✓ Use of radio aids
- ✓ Level flight, control of heading, altitude and airspeed, power setting, trim technique
- ✓ Altimeter settings

- ✓ Timing and revision of ETAs (En-route hold -if required)
- ✓ Monitoring of flight progress, flight log, fuel usage, systems management
- ✓ ATC liaison and compliance. R/T procedures

APPROACH PROCEDURES

- ✓ Setting and checking of navigational aids, identification of facilities
- ✓ Arrival procedures, altimeter checks
- ✓ Approach and landing briefing, including descent/approach/landing checks
- ✓ Holding procedure
- ✓ Compliance with published approach procedure
- ✓ Altitude, speed heading control, (stabilized approach)
- ✓ Go-around action
- ✓ Missed approach procedure I landing
- ✓ ATC liaison -compliance, R/T procedures

Simulated asymmetric flight

- ✓ Simulated engine failure after take-off or on go-around]
- ✓ Asymmetric approach and procedural go-around
- ✓ Asymmetric approach and landing, missed approach procedure

2.9 Flight Instructor FI(A) Course

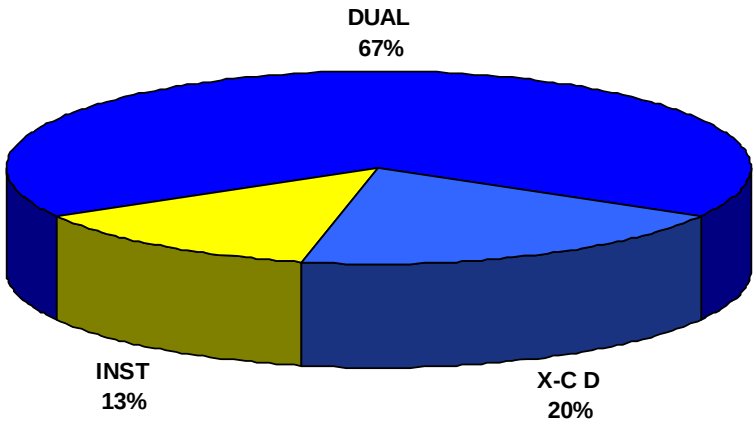
2.9.1 Course Structure

The course objective is to give adequate training to the applicant in flight instruction in order to be capable to instruct the syllabus of PPL(A) and/or CPL(A), a single-engine class. The course is intended to develop the trainees handling skills whilst operating the aircraft from the both the left and right hand seats. He will be exposed to the operation of the appropriate aeroplane and will be required to demonstrate his proficiency in this area. The course aims to develop, in a constructive manner, the trainee's skills to present flight briefings, impart knowledge, assess performance and conduct debriefing.

The flying training in Global Air Services for the flight instructor course shall comprise a total of at least 30 hours, not include all flying tests, of which 25 hours shall be dual flight instruction. The remaining five hours may be mutual flying (that is, two applicants flying together to practice flight demonstrations).

The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide.

The air exercises of the course are analyzed in the following table:



	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 1: Aircraft Familiarization and Preparation for Flight								2
Exercise 2: Preparation for and action after flight								2
Exercise 3: Air experience	1							
Exercise 4: Effects of controls – Attitudes and Movements	1							
Exercise 5: Taxiing and Ground Emmergencies	1							
Exercise 6: Straight and Level Flight	1							
Exercise 7: Climbing	1							
Exercise 8: Descending	1							
Exercise 9: Turning	1							
Exercise 10A: Slow Flight	2							
Exercise 10B: Stalls	1							
Exercise 11: Spin avoidance	1							
Exercise 12: Take-off and climb to downwind position	1							
Exercise 13: Circuit approach and landing	2							
Exercise 13E: Emergencies	2							
	16	0	0	0	0	0	0	4
Exercise 16: Forced landing without power	3	0						
Exercise 17: Precautionary landing	1	0						
Exercise 18A: Introduction to Navigation			1					
Exercise 18B Navigation problems at lower levels and in reduced visibility			1					
Exercise 18C Radio navigation					1			
Exercise 19 Introduction to Instrument Flight					1			
Exercise 19A: Basic Instruments – Pattern “A”					1			
Exercise 19b: Basic Instruments – Pattern “B”					1			
Exercise 21: Advancing to Navigation			4					
	4	0	6	0	4	0	0	0
TOTALS	**20**	**0**	**6**	**0**	**4**	**0**	**0**	**4**
Exercise 60 FINAL CHECK						1		

Exercise 1: Aircraft Familiarization and Preparation for Flight

EXERCISE OBJECTIVE: To familiarize the student with Global Air Services Flight Flight Training procedures Regulations, dispatch procedures, pre-flight planning, training aircraft, and post flight requirements including logbook maintenance. Also to familiarize the student with the use of the emergency checklist and the emergency exits and equipment on board the aircraft.

Exercise 2 will be four hours ground briefing

- ✓ Flight Training Organization Regulations
- ✓ Pre-flight weather procedures
- ✓ Pre-flight planning requirements
    - o Weight & balance computations
    - o Take off performance computations
    - o Landing performance computations
- ✓ Familiarization with the aeroplane
    - o Characteristics of the aeroplane
    - o Cockpit layout
    - o Systems
    - o Check lists, drills, controls
- ✓ Emergency drills
    - o Action in the event of fire on the ground an in the air
    - o Engine cabin and electrical system fire
    - o Systems failure
    - o Escape drills, location and use of emergency equipment and exits
- ✓ Post flight requirements
    - o Return and securing of aircraft
    - o Aircraft maintenance discrepancy procedures
    - o Logbook maintenance and debriefing
- ✓ Differences when occupying the instructor's seat.

Exercise 2: Preparation for and action after flight

EXERCISE OBJECTIVE: The student will be more familiar with the Flight Training Organization procedures and aircraft environment.

Exercise 2 will be ground briefing

- ✓ Flight authorization and aeroplane acceptance including technical log and certificate of maintenance.
- ✓ Equipment required, such as maps, etc.
- ✓ External checks.
- ✓ Internal checks.
- ✓ Harness, seat and rudder pedal adjustments.
- ✓ Starting and warm up checks.
- ✓ Power checks.
- ✓ Running down system checks and switching off the engine.
- ✓ Leaving the aeroplane parking, security and picketing (e.g. tie down).
- ✓ Completion of authorization sheet and serviceability documents.
- ✓ Discuss next lesson and establish targets

Exercise 3: Air experience

EXERCISE OBJECTIVE: The student will become familiar with the training airplane, its operating characteristics, flight controls, basic instruments and systems, pre-flight procedures, proper use of the checklist, and general good operating techniques and safety procedures. Instruction will be given in manoeuvring the airplane on the ground and in basic flight manoeuvres using the horizon (no the attitude indicator. Instructor must demonstrate all manoeuvres initially hiding ASI, VSI, etc). In flight training, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon. As basic flying skills are developed through training and experience, the pilot will acquire an awareness of these references.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the training airplane and safe operating techniques should be demonstrated.

Note: The notation (VR/IR) will be used throughout this syllabus to indicate the use of integrated instruction. Each new manoeuvre will be introduced by visual reference (VR) and attitude instrument reference (IR)

Flight Lesson

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Performing pre-flight line inspection to include required aircraft documents
- ✓ Correct use of the checklist
- ✓ Engine start and engine controls
- ✓ Radio communications on the ground and in flight
- ✓ Taxi -speed and directional control including use of brakes
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal takeoff
- ✓ Traffic pattern departure
- ✓ Local area familiarization which may include short point to point flight
- ✓ Straight and level flight (VR)
- ✓ Trim technique
- ✓ Medium banked turns (VR) and how to clear for traffic before turning
- ✓ Climbs (VR)
- ✓ Glides (VR)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane

Exercise 4: Effects of controls – Attitudes and Movements

EXERCISE OBJECTIVE: The student will become familiar with the controls of the aircraft and the effect of them during flight. Again, control of the airplane is a matter of fixing the relationship of the nose and wingtips of the airplane to a specific position in relation to the horizon

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis. A general understanding of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be demonstrated.

Flight Lesson

- ✓ Primary effects when laterally level and when banked using the aileron and the rudder
- ✓ Effects of Airspeed and Power using the elevator during climb descend.
- ✓ Trimming controls (Nose attitude and then trim for straight and level, climb and descend)
- ✓ Flaps. Effects of Nose Attitude, Airspeed and Power
- ✓ Operation of Mixture control, Carburetor heat, Cabin heating/ventilation

Exercise 5: Taxiing and Ground Emergencies

EXERCISE OBJECTIVE: The student will be familiar with taxiing procedures normal and emergencies also with the aircraft parking area of the Global Air Services

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, without assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to taxi for take off and to the parking area after landing. The student shall be able to secure the airplane and fill the appropriate documents (tech log etc) by himself.

Flight Lesson

- ✓ Pre-taxi checks
- ✓ Starting, control of speed and stopping
- ✓ Engine handling
- ✓ Control of direction and turning
- ✓ Turning in confined spaces
- ✓ Parking area procedure and precautions
- ✓ Effects of wind and use of flying controls
- ✓ Effects of ground surface
- ✓ Freedom of rudder movement
- ✓ Marshalling signals
- ✓ Instrument checks
- ✓ Air traffic control procedures
- ✓ Emergencies
    - o Brake and steering failure

During the flight further training of the horizon in relation to airplane's nose attitude during straight and level, climb, descend and trimming techniques should be given according to objectives of the Exercise 4 including demonstration of:

- ✓ Shallow turns
- ✓ Medium turns
- ✓ Steep turns
- ✓ Climb
- ✓ Descend
- ✓ Glides

Exercise 6: Straight and Level Flight

EXERCISE OBJECTIVE: The student will review and practice the four fundamentals forces of flight. Also, the student will be introduced further to climbing and throttle control, rudder control, and level off procedures. The student will perform communications, taxi and take-of rolls. Aircraft stability will be demonstrated to instil confidence and stress the importance of proper trim.

COMPLETION STANDARDS: At the completion of this lesson, the student shall be able to, with no assistance, conduct a pre-flight, use the checklist, perform a run-up check of engine and systems, and know how to use the controls to move the airplane about its respective axis performing climbs, descends and shallow – medium turns. A general understanding of the traffic pattern and landings techniques should be demonstrated.

Pre-flight Discussion and Briefing

(The pre-flight briefing will be performed by the student with the instructor assistance)

- ✓ Current and forecast weather/Notams
- ✓ Performance planning/weight and balance
- ✓ The Forces
- ✓ Longitudinal Stability and Control in Pitch
- ✓ Relationship of C of G to Control in Pitch
- ✓ Lateral and Directional Stability (Control of Lateral Level and Balance)
- ✓ Attitude and Balance Control Trimming
- ✓ Power Settings and Airspeeds
- ✓ Drag and Power Curves
- ✓ Range and Endurance

Flight Lesson

- ✓ Normal takeoff (performed by the student assisted by the instructor)
- ✓ Traffic pattern departure
- ✓ Normal climb (performed by the student assisted by the instructor)
- ✓ Straight and level at normal cruising power, attaining and maintaining straight and level flight (performed by the student without any assistance)
- ✓ Medium and steep turns (performed by the student assisted by the instructor)
- ✓ Glides (performed by the student assisted by the instructor)
- ✓ Vigilance for other traffic
- ✓ Demonstrate traffic pattern entry approach and normal landing
- ✓ Parking, shutdown, and securing airplane (performed by the student without any assistance)

Exercise 7: Climbing

EXERCISE OBJECTIVE: The student will review and practice the fundamentals of climb, turns, descend, glide, and turns in order to increase proficiency. The student also will perform takeoff assisted by the instructor.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to conduct all pre-flight operations and establish proper pitch attitude and power for climbs without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review of the relationship between Power/Airspeed and Rate of Climb
- ✓ Maximum Rate of Climb (Vy) and Maximum Angle of Climb (Vx) (Effect of: Mass, Flaps and density Altitude)

Flight Lesson

- ✓ Use of checklist (performed by the students without any help)
- ✓ Pre-flight checks and engine start (performed by the students without any help)
- ✓ Radio communications (performed by the students without any help)
- ✓ Taxi (performed by the students without any help)
- ✓ Pre-takeoff checks (run-up) (performed by the students without any help)
- ✓ Normal takeoff (performed by the students without any help)
- ✓ Traffic pattern departure and entry (performed by the students assisted by the instructor)
- ✓ Straight and level (performed by the students without any help)
- ✓ Climbing (performed by the students without any help)
    - o Entry, maintaining the normal and max rate climb
    - o levelling off
    - o levelling off at selected altitudes
    - o Control in pitch, including use of trim
    - o En-route climb (cruise climb)
    - o climbing with flap down
    - o Maximum angle of climb
    - o Introduction to Slow Flight (ΒΑΠΕ – ΒΑΠΕ)
- ✓ Glides (performed by the students assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 8: Descending

EXERCISE OBJECTIVE: The student will demonstrate his ability to perform climbs and turns. The instructor will review descends and glides in order to increase student's proficiency. Also, the student will be introduced to combine rudder control and ailerons during S-turns (συνδυασμός πηδαλίων). A demonstration to slow flight (ΒΑΠΕ-ΒΑΠΕ) also will be repeated

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to perform without any assistance and establish proper pitch attitude and power for descends and glides. The student also will be able to perform Slow Flights and S-turns with the instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams (Performed by the student)
- ✓ Review performance planning/weight and balance (Performed by the student)
- ✓ Glide Descent Angle -Airspeed -Rate of Descent (Performed by the student)
- ✓ Effect of Flaps (Performed by the student)
- ✓ Effect of Wind (Performed by the student)
- ✓ Effect of Mass (Performed by the student)

Flight Lesson

- ✓ Use of checklist (Performed by the student)
- ✓ Pre-flight checks and engine start (Performed by the student)
- ✓ Radio communications (Performed by the student)
- ✓ Taxi (Performed by the student)
- ✓ Pre-takeoff checks (run-up) (Performed by the student)
- ✓ Normal takeoff (Performed by the student)
- ✓ Traffic pattern departure and entry (Performed by the student)
- ✓ Straight and level (Performed by the student)
- ✓ Climbs (Performed by the student)
- ✓ Descends and Glides (Performed by the student assisted by the instructor)
    - o Entry, maintaining and levelling off
    - o Levelling off at selected altitudes
    - o Glides
- ✓ Slow Flight (ΒΑΠΕ – ΒΑΠΕ) (Performed by the student assisted by the instructor)
- ✓ Approach and normal landing (performed by the student assisted by the instructor)

Exercise 9: Turning

EXERCISE OBJECTIVE: The student will review and practice climb, descends and glide turns, to increase proficiency. Also, the student will review S-turns. The student will perform taxi and takeoff.

COMPLETION STANDARDS: At the completion of this lesson the student shall be able to establish proper pitch attitude and power for turns (climbing and descending) without instructor assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Climbing and Descending Turns
- ✓ Turning onto Selected Headings -Use of Gyro Heading Indicator and Magnetic Compass

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)

Flight Lesson (Introduce) Air Exercise 9 Turning

- ✓ Entry and maintaining medium level turns
- ✓ Climbing turns
- ✓ Descending turns
- ✓ Turns onto selected headings, use of gyro heading indicator and compass
- ✓ Entry and maintaining steep turns

Exercise 10A: Slow Flight

Note: One hour will be with a student and the flight instroctor's intructor will occupy the rear seat observing the training provided by student instructor.

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson should refined slow flight. The objective is to improve the student's ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

COMPLETION STANDARDS: The student instructor will be expected to control airspeed in all manoeuvres within ± 5 kts, heading within 5° and ± 20 feet.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/No tams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Aeroplane Handling Characteristics during Slow Flight at:
- ✓ Vs1 & V so + 10 knots
- ✓ Vs1 & V so + 5 knots
- ✓ Explanation of the initials VAPE-VAPE

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level, (VR)
- ✓ Climbs (VR)
- ✓ Descends (VR)
- ✓ Medium & steep turns

Flight Lesson (Introduce)

- ✓ Safety checks
- ✓ Introduction to slow flight
- ✓ Controlled Slow Flight in the Clean Configuration at V so + 5 knots:
- ✓ Slow Flight Straight & Level Flight Level
- ✓ Ailerons Effectiveness
- ✓ Drifts
- ✓ Rate of turn and Radius

- ✓ Airmanship using flaps at low airspeeds
- ✓ Effect of going around in configurations where application of engine power causes a strong 'nose up' trim change

Exercise 10B: Stalls

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce stalls.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Stall recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Characteristics of the Stall
- ✓ Angle of Attack
- ✓ The Effectiveness of the Controls at the Stall
- ✓ Factors Affecting the Stalling Speed:
    - o Effect of Flaps/Slats/Slots
    - o Effect of Power/Mass/C of G/Load Factor
    - o The Effects of Unbalance at the Stall
- ✓ The Symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Stalling & Recovery:
- ✓ Without Power
- ✓ With Power On
- ✓ With Flaps Down
- ✓ Stalling and Recovery at the Incipient Stage with 'Instructor Induced' Distractions

* Stalling & Recovery during manoeuvres involving more than 1 G (accelerated stalls, including, secondary stalls & recoveries). Consideration is to be given to manoeuvre limitations and references to The Owners/Flight manual or Pilot's Operating Handbook must also be made in relation to Mass and Balance limitations. These factors must also be covered in the next exercise spinning.

Flight Lesson (Review)

- ✓ Use of checklist
- ✓ Pre-flight checks and engine start
- ✓ Radio communications
- ✓ Taxi
- ✓ Pre-takeoff checks (run-up)
- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Straight and level

- ✓ Climbs
- ✓ Descends
- ✓ Medium & steep turns
- ✓ Slow Flight

Flight Lesson (Introduce) Air Exercise 10 B Stalling

- ✓ Airmanship
- ✓ Safety checks (1A 5E)
- ✓ The symptoms of the Stall
- ✓ Stall Recognition & Recovery
- ✓ Recovery without Power
- ✓ Recovery with Power
- ✓ Recovery when a Wing Drops at the Stall
- ✓ Stalling with Power 'ON' & Recovery
- ✓ Stalling with Flap 'Down' & Recovery
- ✓ Stalling with Power 'OFF' & Recovery
- ✓ Repetitive Stall

Exercise 11: Spin avoidance

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency .This lesson will introduce spins.

COMPLETION STANDARDS: The student will be expected to control airspeed within ± 10 kts and heading within 15° in straight and level flight. Spin recognition should, with instructor assistance, be prompt with correct technique employed in recovery

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ SPIN RECOVERY at the INCIPIENT STAGE
- ✓ Causes, Stages, Autorotation and Characteristics of the Spin
- ✓ Recognition and Recovery at the Incipient Stage -entered from various flight attitudes Aeroplane
- ✓ Limitations
- ✓ Airmanship -Safety Checks
- ✓ SPIN RECOVERY at the DEVELOPED STAGE
- ✓ The Spin Entry
    - o Recognition & Identification of Spin Direction
    - o The Spin Recovery
    - o Use of Controls
    - o Effects of Power/Flaps (flap restriction applicable to type)
    - o Effect of the C of G upon spinning characteristics
    - o Spinning from Various Flight Attitudes
    - o Aeroplane Limitations
    - o Airmanship -Safety Checks
    - o Common Errors during Recovery

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 11A/ B Sinning

AIR EXERCISE 11 A SPIN RECOVERY at the INCIPIENT STAGE

- ✓ Aeroplane Limitations.
- ✓ Airmanship
- ✓ Safety Checks

- ✓ Recognition at the Incipient Stage of a Spin
- ✓ Recoveries from Incipient Spins entered from various attitudes with the Aeroplane in the Clean

AIR EXERCISE 11 B SPIN RECOVERY at the DEVELOPED STAGE - Aeroplane Limitations

- ✓ The Spin Entry
- ✓ Recognition & Identification of the Spin Direction the Spin
- ✓ Recovery (reference to Flight Manual)
- ✓ Effects of Power/Flaps (restrictions applicable to aeroplane type)

NOTE: Consideration of manoeuvre limitations and the need to refer to the aeroplane manual and mass and balance calculations.

Exercise 12: Take-off and climb to downwind position

EXERCISE OBJECTIVE: In addition to providing a review of manoeuvres previously presented, the student will be introduced to different climb and descent configurations and how to transition from one to the other. Loss of engine power emergency procedures during takeoff and climb out will also be introduced.

COMPLETION STANDARDS: The student should display, through performance and discussion, complete understanding of possible emergencies and procedures to use during takeoff. The student shall maintain airspeeds with increased awareness of impending stalls and positive coordinated control usage becoming more consistent. Configuration changes shall be accomplished with correct usage of throttle control and trim technique. Principles of aircraft control during landing should be understood.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Handling- Factors affecting the length of Take-off Run and Initial Climb
    - o The Correct Lift Off Speed, use of Elevators (Safeguarding the Nose Wheel), Rudder and Power
    - o Effect of Wind (including Crosswind Component)
    - o Effect of Flaps (including the Decision to Use and the Amount Permitted)
    - o Effect of Ground Surface and Gradient upon the Take-off Run
    - o Effect of Mass, Altitude and Temperature on Take-off and climb Performance
    - o Pre Take-Off Checks
    - o Air Traffic Control Procedure (before Take-Off)
    - o Drills, during and after Take-off
    - o Short/Soft Field Take-Off Considerations/Procedures
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Airmanship and Air Traffic Control Procedures

Flight Lesson (Review)

- ✓ Slow Flight
- ✓ Stalls

Flight Lesson (Introduce) Air Exercise 12 Take-off and landing to downwind position

- ✓ Pre Take-Off Checks
- ✓ Into Wind Take-Off
- ✓ Crosswind Take-Off
- ✓ Drills During and After Take-Off

- ✓ Short Take-Off and Soft Field Procedure/Techniques (including Performance Calculations)

Exercise 13: Circuit approach and landing

Note: One hour will be with a student and the flight instroctor's intructor will occupy the rear seat observing the training provided by student instructor.

EXERCISE OBJECTIVE: This lesson will consist of a review of manoeuvres previously presented and the beginning of concentrated practice on landings. Go around for a safe landing will be introduced. At least two unassisted landings to a full stop will be accomplished.

COMPLETION STANDARDS: Approaches should be stabilized as well as the use of proper crosswind control techniques. By this point in training transfer of full responsibility for radio communications should be complete.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets :
- ✓ The Downwind Leg, Base Leg, Approach
- ✓ Factors Affecting the Final Approach and the Landing Run:
    - o Effect of Mass
    - o Effects of Altitude and Temperature
    - o Effect of Wind
    - o Effect of Flap
- ✓ The Landing
    - o Effect of Ground Surface and Gradient upon the Landing Run
- ✓ Types of Approach and Landing:
    - o Powered
    - o Crosswind
    - o Flapless (at an appropriate stage of the course)
    - o Glide
    - o Short Field
    - o Soft Field
- ✓ Missed Approach Engine Handling
- ✓ Wake Turbulence Awareness
- ✓ Wind shear Awareness
- ✓ Airmanship and Air Traffic Control Procedures
- ✓ Mislanding/Go around
- ✓ Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Air Exercise 13 Circuit approach and landing

- ✓ Circuit Procedures -Downwind, Base Leg
- ✓ Powered Approach and Landing
- ✓ Safeguarding the Nose wheel
- ✓ Effect of Wind on Approach and Touchdown Speeds and use of Flaps
- ✓ Crosswind Approach and Landing
- ✓ Glide Approach and Landing
- ✓ Flapless Approach and Landing (short and soft field)
- ✓ Short field and soft field procedures
- ✓ Missed Approach/Go around

Exercise 13E: Emergencies

Note: One hour will be with a student and the flight instroctor's intructor will occupy the rear seat observing the training provided by student instructor.

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce procedures to employ during partial or complete loss of power while on any leg of the traffic pattern.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing (unassisted). Safe control of approach and landing following simulated loss of power on downwind will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ EMERGENCIES:
    - o Aborted Take-Off
    - o Engine Failure after Take-Off
    - o Wake Turbulence Awareness
    - o Wind shear Awareness
    - o Airmanship and Air Traffic Control Procedures
    - o Mislanding/Go around
    - o Special emphasis on lookout

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff
- ✓ Traffic pattern departure and entry

Flight Lesson (Introduce) Emergencies

- ✓ Aborted Take-Off
- ✓ Engine Failure after Take-Off
- ✓ Glide Approach (High Altitude Engine Failure and Emergency Landing)
- ✓ Miss-landing/go-around

Exercise 16: Forced landing without power

Note: One hour will be with a student and the flight instroctor's intructor will occupy the rear seat observing the training provided by student instructor.

EXERCISE OBJECTIVE: This lesson will be a review of previously presented manoeuvres for evaluation and practice in preparation for stuent's solo. Also provides additional practice of selected normal and emergency procedures to allow instructor evaluation of the student's competency to accomplish a supervised solo.

COMPLETION STANDARDS: The student shall display the competency to successfully perform a first solo flight.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Review Pre-solo written test

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations, Collision avoidance
- ✓ Normal takeoff and landing
- ✓ Short Field /Soft Field takeoff and landing (intro)
- ✓ Emergency procedures including simulated loss of engine power
    - o forced landing procedure
    - o choice of landing area, provision for change of plan
    - o gliding distance, descent plan, key positions
    - o engine cooling, engine failure checks
    - o use of radio
    - o base leg, final approach
    - o landing – actions after landing
- ✓ Precautionary procedures (go around)

Flight Lesson:

- ✓ Supervised solo flight in the traffic pattern

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 17: Precautionary landing

EXERCISE OBJECTIVE: To review pre-solo manoeuvres with higher level of proficiency required, and to accomplish the student's supervised solo in the traffic pattern.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates solo competence in manoeuvres performed and safely accomplishes a supervised solo in the traffic pattern. The student should be able to perform sort and soft field takeoffs and maximum climbs without instructor's assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

NOTE: During the flights immediately following the solo circuit consolidation period the procedures for leaving and rejoining the Circuit and the Local Area (Restrictions, Controlled Airspace, etc.) should be covered.

Flight Lesson (Review & Evaluation)

- ✓ Traffic pattern operations
- ✓ Collision avoidance
- ✓ Short Field /Soft Field takeoff and landing (Intro)
- ✓ Maximum climb
- ✓ Precautionary landing
    - o full procedure away from aerodrome to break-off height
    - o occasions necessitating
    - o in-flight conditions
    - o landing area selection
    - o normal aerodrome
    - o disused aerodrome
    - o ordinary field
    - o circuit and approach
    - o actions after landing

*Note: Student Pilot Certificate must be endorsed prior to solo operation of the airplane.

Instructor's briefing, observation of flight and de-briefing

Exercise 18A: Introduction to Navigation

EXERCISE OBJECTIVE: To re-familiarize the student with the local practice area and to improve proficiency with more advanced manoeuvres in preparation for local area solo practice flights. The student will be instructed in the planning and conducting of cross-country flights using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o map selection and preparation, choice of route, controlled airspace
    - o danger, prohibited and restricted areas, safety altitudes
    - o calculations, magnetic heading(s) and time(s) en-route, fuel consumption
    - o mass and balance, mass and performance
    - o flight information, NOTAMS etc., radio frequencies, selection of alternate aerodromes
    - o aeroplane documentation, notification of the flight, pre-flight administrative procedures, flight plan form
    - o Departure
    - o organisation of cockpit workload
    - o departure procedures
    - o altimeter settings
    - o ATC liaison in controlled/regulated airspace
    - o setting heading procedure
    - o noting of ETAs
    - o maintenance of altitude and heading
    - o revisions of ETA and heading
    - o log keeping
    - o use of radio, use of navaids
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o transiting controlled/regulated airspace
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures

Considerations are to be given to airplane performance and Mass & Balance calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ calculations, magnetic heading(s) and time(s) en-route, fuel consumption
- ✓ departure procedures, altimeter settings
- ✓ ATC liaison in controlled/regulated airspace
- ✓ setting heading procedure, noting of ETAs, maintenance of altitude and heading
- ✓ revisions of ETA and heading
- ✓ log keeping
- ✓ use of radio, use of navaids
- ✓ minimum weather conditions for continuation of flight, in-flight decisions
- ✓ diversion procedures
- ✓ uncertainty of position procedure
- ✓ lost procedure
- ✓ Arrival, aerodrome joining procedure
    - o ATC liaison in controlled/regulated airspace
    - o altimeter setting
    - o entering the traffic pattern
    - o circuit procedures

Exercise 18B Navigation problems at lower levels and in reduced visibility

EXERCISE OBJECTIVE: In addition to a selected review of previously presented manoeuvres and concentrated practice of takeoffs and landings, this lesson will introduce navigation problems at lower levels and in reduced visibility.

COMPLETION STANDARDS: During this lesson the student shall continue to demonstrate proficiency in previously practiced manoeuvres and safe control of landing. Safe control of aircraft and correct decision making at lower levels and in reduced visibility will be demonstrated.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o actions prior to descending
    - o hazards (e.g. obstacles, and terrain)
    - o difficulties of map reading
    - o effects of wind and turbulence
    - o avoidance of noise sensitive areas
    - o joining the circuit
    - o bad weather circuit and landing

Flight Lesson (Review)

- ✓ Introduction to VFR routes, Transponder settings and comms
- ✓ Normal / crosswind takeoff and landing
- ✓ Short/Soft field takeoff and landing
- ✓ Traffic pattern departure and entry
- ✓ Slow Flight (BAPE – BAPE) evaluation
- ✓ Level, Descending and Climbing Steep Turns
- ✓ Spiral Dive and Recovery from Unusual Attitudes
- ✓ Forced Landing Without Power
- ✓ Precautionary landing Flight Lesson

Flight Lesson (Introduce)

- ✓ Navigation problems at lower levels and in reduced visibility
    - o minimum weather conditions for continuation of flight, in-flight decisions
    - o diversion procedures
    - o uncertainty of position procedure
    - o lost procedure
    - o Actions Prior to Descending
    - o Effects of Wind and Turbulence

- Hazards of operating at low levels
- Low Cloud and Good Visibility
- Low Cloud and Poor Visibility
- Avoidance of Moderate to Heavy Rain Showers
- Effects of precipitation (forward visibility)
- bad weather circuit and landing

Exercise 18C Radio navigation

EXERCISE OBJECTIVE: This lesson will consist of a review of previously presented manoeuvres and procedures in order to gain increased proficiency. Furthermore will introduce the use of NAV AIDS with emphasis to Position determination on the map using VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrates an improved performance of the advanced manoeuvres and is able to determine position in the local practice area using VOR and ADF.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
  - o Use of VHF Omni Range
    - availability, AIP, frequencies
    - selection and identification
    - omni bearing selector (OBS)
    - to/from indications, orientation
    - course deviation indicator (CDI)
    - determination of radial
    - intercepting and maintaining a radial
    - VOR passage
    - obtaining a fix from two VORs
  - o Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
    - availability, AIP, frequencies
    - selection and identification
    - orientation relative to the beacon
    - homing
  - o Use of en-route/terminal radar
    - availability, AIP
    - procedures and ATC liaison
    - pilot's responsibilities
    - secondary surveillance radar
    - transponders
    - code selection
    - interrogation and reply
  - o Use of distance measuring equipment (DME)
    - station selection and identification
    - modes of operation

- distance, groundspeed, time to run

Flight Lesson (Introduce)

- Use of VHF Omni Range
  - selection and identification, omni bearing selector (OBS)
  - to/from indications, orientation, course deviation indicator (CDI)
  - determination of radial, intercepting and maintaining a radial
  - VOR passage
  - obtaining a fix from two VORs
- Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)
  - selection and identification
  - orientation relative to the beacon
  - homing
- Use of en-route/terminal radar
  - procedures and ATC liaison, pilot's responsibilities
  - secondary surveillance radar
  - transponders, code selection
  - interrogation and reply
- Use of distance measuring equipment (DME)
  - station selection and identification
  - modes of operation
  - distance, groundspeed, time to run

Exercise 19 Introduction to Instrument Flight

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. The student has to follow the appropriate procedures with minimum assistance in order to join the traffic pattern and to land without any assistance.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Flight Instruments
    - o Attitude Instrument Flight
    - o Pitch Indications
    - o Bank Indications
    - o Introduction to the Use of the Attitude Indicator
    - o Pitch Attitude
    - o Bank Attitude
    - o Maintenance of Heading and Balanced flight
    - o Instrument Limitations (inc. System Failures)

ATTITUDE, POWER & PERFORMANCE

- ✓ Control Instruments
- ✓ Performance Instruments
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications
- ✓ Instrument Interpretation

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Introduce) Introduction to Basics using the Instruments

- ✓ Attitude Instrument Flight
- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight

- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments

THE BASIC FLIGHT MANOEUVRES (FULL PANEL)

- ✓ Straight and Level Flight at various Airspeeds and Aeroplane Configurations
- ✓ Climbing
- ✓ Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending turns Onto Pre-Selected Headings

Flight Lesson Review

- ✓ Traffic pattern departure and entry – T&G
- ✓ VFR Routes, Transponder setting and comms

Exercise 19A: Basic Instruments – Pattern "A"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'A' analysis

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'A'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL i.e. use of magnetic compass {unos})
    - o Straight and Level Flight
    - o Standard Rate Turns
    - o Turns onto Pre-Selected Headings
    - o Cross Checking the Instruments

Exercise 19b: Basic Instruments – Pattern "B"

EXERCISE OBJECTIVE: To increase the student's confidence of attitude instrument flying as related to straight-and-level flight, turns, climbs and descents. The exercise PATTERN 'A' will be performed by the student and PATTERN 'B' will be introduced.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate, that he has an understanding of the concept of attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
- ✓ PATTERN 'B' analysis
- ✓ Flight Lesson PATTERN 'A' Review
    - o Full Panel
    - o Partial Panel

Flight Lesson (Introduce)

- ✓ Introduction to pre-described patterns using PATTERN 'B'
- ✓ THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)
    - o Straight and Level Flight at various Airspeeds and Aeroplane Configurations
    - o Climbing
    - o Descending
    - o Standard Rate Turns
    - o Climbing & Descending turns Onto Pre-Selected Headings

Exercise 21: Advancing to Navigation

Note: Two hours will be with a student and the flight instroctor's intructor will occupy the rear seat observing the training provided by student instructor.

EXERCISE OBJECTIVE: To re-familiarize with dispatch procedures, pre-flight planning, post flight requirements, and to the student's proficiency in cross-country planning procedures. The student must be prepared in order to conduct a cross-country flight from LGMG – ALEPOCHORI – GERMI – IKAROS - LARYMNA – CHALKIS – OROPOS – MALAKASA – LIMNI – LGTT – ZOFRI – ELEFSIS – LGMG using dead reckoning, pilotage, including instruction in departure, enroute and arrival procedures in the ATC environment. A very good review also in the emergency landings and emergency procedures will be performed in order to develop the ability to take proper action in emergency situations.

Note 1: The recommended minimum will be completed in more than one sortie

Note 2: The flight will be performed at the IKAROS - KOPAIDA area. Forced – emergency landings will be performed at IKAROS or KOPAIDA and returning on the airport (Megara) at 2500 to 3500 feet.

Note 3: Complete NAV Log will be filled without instructor's assistance. During the flight the student will keep time using map time-lines and continuously will estimate (with minimum assistance) the airplane position using dead reckoning techniques and known VOR & NDB.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student is able to determine position (with assistance) in the practice area by dead reckoning pilotage and can safely perform communications and manoeuvres in order to join landing pattern. The student also must be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should be able to maintain airspeed within ±10 knots, altitude within ±100 feet, and heading within ±10º of that desired.

COMPLETION STANDARDS: The lesson will have been successfully completed when the student, with minimum instructor assistance, is able to plan, plot, and fly the planned course making the appropriate radio communications. The student should be competent in navigating by means of pilotage, dead reckoning, VOR, and / or ADF, and when so instructed, is able to accurately plan and fly a diversion to an alternate airport. Estimated times of arrival should be accurate with an apparent error of not more than 10 minutes. Any off-course corrections should be accomplished accurately and promptly. The student should be able to give the instructor an accurate position report at any time without hesitation. When given a "simulated lost" situation, the student should be able to initiate and follow an appropriate "lost procedure".

Note 3: The student has to be able to demonstrate an increased proficiency in previously covered procedures and manoeuvres including emergency landings and procedures. The student should also be able to maintain airspeed within ±5 knots, altitude within ±50 feet, and heading within ±5º of that desired.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets:
    - o Selection of forced landing areas
    - o Provision for change of plan
    - o Gliding distance -consideration

- Planning the descent Key positions
- Engine failure checks
- Use of radio -R/T 'Distress' Procedure
- The base leg
- The final approach
- Go around
- The landing considerations
- Actions after landing -Aeroplane security
- Causes of engine failure

✓ Advancing to QDM Meaning and Use (VOR/ADF)

Considerations are to be given to airplane performance, Mass & Balance and NAV Log calculations with reference to the Owner's/Flight Manual/Pilot's Operating Handbook.

Flight Lesson (Review)

✓ Normal / crosswind takeoff and landing
✓ Short/Soft field takeoff and landing
✓ Traffic pattern departure and entry
✓ Compass turns
✓ NDB & VOR Homing
✓ Position determination on the map using VOR & NDB
✓ Dead reckoning pilotage
✓ Forced Landing Procedures
✓ Selection of Landing Area
✓ Gliding Distance Considerations
✓ Planning the descent:
- Key Positions
- Engine Failure Checks
- Engine cooling precautions

✓ Use of Radio
✓ The Base Leg
✓ The Final Approach
✓ The Landing } When the Exercise is
Actions after Landing } conducted at an
Aeroplane Security } Aerodrome
✓ Airmanship

2.10 Class Rating Instructor CRI(A) Course

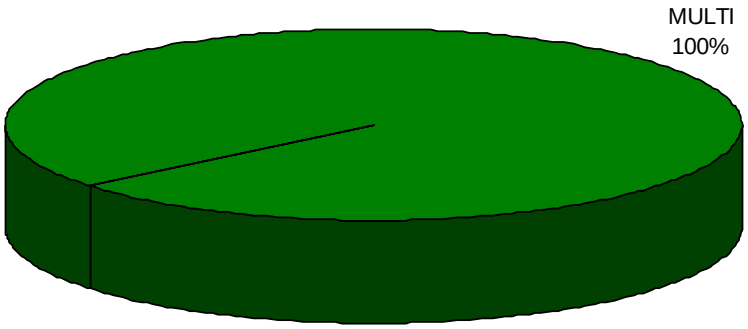
2.10.1 Course Structure

The course objective is to give adequate training to the applicant in flight instruction in order to be capable to instruct the initial training of a single-pilot multi engine piston class icluding asymmetric flight. The course is intended to develop the trainees handling skills whilst operating the aircraft from the both the left and right hand seats. He will be exposed to the operation of the appropriate aeroplane and will be required to demonstrate his proficiency in this area. The course aims to develop, in a constructive manner, the trainee's skills to present flight briefings, impart knowledge, assess performance and conduct debriefing.

The flying training in Global Air Services for the Class Rating Instructor course shall comprise a total of at least 5 hours, not include flying tests.

The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide.

The air exercises of the course are analyzed in the following table:



CRI(A) Course								
Exercise 50: Introduction to Multi Engine Principles								6
Exercise 51: Take-Off and Climb							1	
Exercise 52: Straight and Level Flight - Descend							1	
Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure							1,5	
Exercise 54: ASYMMETRIC POWER FLIGHT “Take-Off and Approach”							1,5	
	0	0	0	0	0	0	5	6
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**6**
Exercise 60 FINAL CHECK					**0**		**1**	

Exercise 50: Introduction to Multi Engine Principles

EXERCISE OBJECTIVE: During this lesson the student instructor will brief the student(s) on multi-engine aerodynamics, operating procedures, systems, and performance considerations. The applicants have to be capable to explain accurately the use performance charts and compute weight and balance data to control the weight and balance conditions of the multi-engine airplane. In addition the have to be capable to teach the principles, techniques, and procedures which apply to engine-out and instrument flight in the multi-engine airplane.

COMPLETION STANDARDS: This lesson will have been completed when all areas of the brief are covered and when the student demonstrates through questioning an understanding of multi-engine flying principles.

AIR LEGISLATION

- ✓ Aeroplane performance group definitions (JAA)

PRINCIPLES OF FLIGHT-THE PROBLEMS

- ✓ Asymmetry Control
- ✓ Performance
- ✓ failed engine propeller drag
- ✓ Total drag increase
- ✓ Asymmetry of lift
- ✓ Effect of yaw in level and turning flight
- ✓ Thrust and rudder side force couples
- ✓ Effect on moment arms

CONTROL IN ASYMMETRIC POWER FLIGHT

- ✓ Use, misuse and limits of:
    - o Rudder
    - o Aileron
    - o Elevators
- ✓ Effect of bank/sideslip/balance
- ✓ Decrease of aileron/rudder effectiveness
- ✓ foot loads and trimming

MINIMUM CONTROL AND SAFETY SPEEDS

- ✓ Minimum control speed (Vmc)
- ✓ Factors affecting (Vmc)
- ✓ Landing gear
- ✓ Flaps
- ✓ Cowl flaps/cooling gills
- ✓ Pilot reaction/competence
- ✓ banking towards the operating engine
- ✓ feathering

- ✓ Critical engine
- ✓ Take-off safety speed
- ✓ Definition/origin of v2

AEROPLANE PERFORMANCE -ONE ENGINE INOPERATIVE

- ✓ Effect on excess power available
- ✓ Single-engine ceiling
- ✓ cruising, range and endurance acceleration/deceleration
- ✓ zero thrust, definition and purpose

PROPELLERS

- ✓ Variable pitch -general principles
- ✓ Feathering/unfeathering mechanism and limitations

SPECIFIC AEROPLANE TYPE AEROPLANE AND ENGINE SYSTEMS

- ✓ Operation normal.
- ✓ operation abnormal
- ✓ emergency procedures

LIMITATIONS –AIRFRAME

- ✓ load factors
- ✓ Landing gear/flap limiting speeds (Vlo and Vfe)
- ✓ Maximum speeds (Vno and Vne)

Limitations – ENGINE

- ✓ Rpm and manifold pressure
- ✓ Oil temperature and pressure
- ✓ Emergency procedures

MASS AND BALANCE

- ✓ To be covered in conjunction with the flight/owner's manual/pilot's operating handbook}

MASS AND PERFORMANCE

- ✓ (To be covered in conjunction with the flight/owner's manual/pilot's operating handbook) calculations for specific aeroplane type (all engines operating)
- ✓ Take-off run
- ✓ Take-off distance
- ✓ accelerate/stop distance
- ✓ landing distance
- ✓ landing run
- ✓ Take-off/climb out flight path
- ✓ Calculations for specific aeroplane type (one engine operating}
- ✓ landing distance

- ✓ landing run

Exercise 50A: Introduction to Avidyne Entegra Glass Cockpit

EXERCISE OBJECTIVE: During this lesson the instructor will brief the student(s) on Avidyne Entegra glass cockpit system. The lesson is based on a CBT course which has been developed by FLIGHT 1 EUROPE LTD in co-operation with Avidyne, and has been designed to familiarize and train the students to efficiently operate the Entegra EXP500 PFD, MFD of the PA-44.

COMPLETION STANDARDS: At the conclusion of each lesson, student comprehension is measured by means of a multiple choice test. During the flight scenarios, the student demonstrates his or her grasp of the material by correctly selecting the appropriate PFD function(s),

INTRODUCTION

- ✓ Course overview
- ✓ Cautions VFR – IFR usage

EXP500 SYSTEM OVERVIEW

OPERATING THE EXP500

FEALURE MODES

Exercise 51: Take-Off and Climb

EXERCISE OBJECTIVE: During the lesson the student will become acquainted with the training airplane. The student should learn the attitudes, power settings, and configurations required for the performance of the listed manoeuvres and procedures using visual references.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations with a minimum of instructor assistance. The applicant will demonstrate the knowledge of attitudes, power settings, and configurations necessary to perform the listed manoeuvres and procedures by maintaining Altitude ± 200 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing

- ✓ Pre- Taxiing area precautions
- ✓ Greater mass -greater inertia
- ✓ Effect of differential power
- ✓ Precautions on narrow taxiways

PRE TAKE-OFF PROCEDURES

- ✓ Engine power checks
- ✓ Pre take-off checks c instructor's briefing to cover the procedure - to be followed should an emergency occur during take-off, e.g. engine failure

THE TAKE-OFF AND INITIAL CLIMB

- ✓ Factors affecting the length of the take-off run/distance
- ✓ Correct lift-off speed
- ✓ Importance of safety speed
- ✓ Crosswind take-off, considerations and procedures
- ✓ Short field take-off, considerations and procedures
- ✓ Engine handling after take-off, throttle/pitch/engine synchronization

CLIMBING

- ✓ Airmanship considerations
- ✓ Pre-climbing checks
- ✓ Engine considerations
- ✓ Use of throttle/pitch controls
- ✓ Maximum rate of climb speed
- ✓ Maximum angle of climb speed
- ✓ Synchronizing the engines

Exercise 52: Straight and Level Flight - Descend

EXERCISE OBJECTIVE: During this lesson, the student will review manoeuvres from the previous lesson. The student will be introduced to stalls, slow flight, steep turns and emergency operations to become familiar with the flight characteristics of the multi-engine aircraft.

COMPLETION STANDARDS: At the completion of this lesson the student will be able to perform the listed ground operations without instructor assistance. During take off and landing, the applicant will demonstrate good directional control and maintain lift off, climb, approach, and touchdown airspeed ±10 knots of the correct speed. Straight and level flight, climbs, and descends will be performed while maintaining assigned airspeed ±10 knots, roll-outs from turns ± 10º of assigned heading, and specified altitude ± 150 feet. The student will be able to demonstrate the correct flight procedures for manoeuvring during slow flight, steep turns, emergency descends, and the correct entry and recovery procedures for stalls. Slow flight manoeuvres and stalls must be completed no lower than 3,000 feet AGL or the manufacturers recommended altitude, whichever is higher.

STRAIGHT AND LEVEL FLIGHT

- ✓ Selections of power -throttle/pitch controls and Engine synchronization
- ✓ Fuel consumption aspects
- ✓ Use of trimming controls
- ✓ Operation of flaps (effect on pitch attitude, effect on airspeed)
- ✓ Operation of landing gear (effect on pitch attitude, effect on airspeed)
- ✓ Use of mixture controls
- ✓ Use of alternate air/carburetor heat controls
- ✓ Operation of cowl flaps/cooling gills
- ✓ Use of cabin ventilation and heating systems

DESCENDING

- ✓ Pre-descent checks
- ✓ Selection of throttle/pitch controls
- ✓ Engine cooling considerations

TURNING

- ✓ Medium turns
- ✓ Climbing/descending
- ✓ Steep turns (45 degrees of bank or more)

Exercise 53: ASYMMETRIC POWER FLIGHT 'In flight' Engine Failure Procedure

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. This section covers the operation of a single-pilot multi-engine aeroplane when one engine has failed and it is applicable to all such light piston aeroplanes. Check lists should be used as applicable. The applicant will be familiar with single engine operations and will understand the significance of such operations

COMPLETION STANDARDS: At completion of this lesson, the student will be able to identify the inoperative engine during cruise and use the correct control inputs to maintain straight flight. The student should have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (Vmc) and recognize the imminent loss of control. The student will also demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

NOTE: In case of traffic at LGMG it is recommended to perform a X-Country from LGMG to MESSOLOGGI (ALEPOCHORI – IXONI – RIO – MESSI). During flight, all previews exercises will be reviewed and the exercises of lessons 79 and 80 will be performed)

Pre-flight Discussion and Briefing

- ✓ MINIMUM CONTROL SPEEDS - ASI colour coding -red radial line
- ✓ FEATHERING AND UNFEATHERING
- ✓ ENGINE FAILURE PROCEDURE
- ✓ Once the maintenance of control has been achieved, the order in which the procedures are carried out will be determined by the phase of operation and the aircraft type.
- ✓ In cruising flight
- ✓ Critical phase such as immediately after take-off or during
- ✓ the approach to landing or during a 'go around'.

Introduction to asymmetric flight

- ✓ Close the throttle of one engine and feather its propeller
- ✓ Effects on aeroplane handling at cruising-speed
- ✓ Effects on aeroplane performance e.g. cruising speed and rate of climb
- ✓ Note foot load to maintain a constant heading
- ✓ Unfeathering the propeller
- ✓ Return to normal flight finding the zero thrust throttle setting
- ✓ Comparison of foot load when feathered and with zero thrust set

Effects and Recognition of Engine Failure in Level Flight with the aeroplane straight and level at cruise speed

- ✓ Slowly close the throttle of one engine
- ✓ Note yaw, roll and spiral descent
- ✓ Return to normal flight -close throttle of other engine
- ✓ Note same effects in opposite direction

Methods of Control and identification of Failed Engine close one throttle and maintain heading and level flight by use of:

- ✓ Rudder to control yaw
- ✓ Aileron to hold wings level
- ✓ Elevators to maintain level flight
- ✓ Power (as required) to maintain airspeed and altitude

Alternative/supplementary Method of Control

- ✓ Simultaneously:
  - o Lower aeroplane nose to increase airspeed
  - o Reduce power
- ✓ Loss of altitude –inevitable
- ✓ Identification of failed engine
  - o Idle foot = idle engine

Use of instruments for identification

- ✓ Fuel pressure/fuel flow
- ✓ RPM gauge
- ✓ Engine temperature gauges
- ✓ Confirmation of identification
  - o Close the throttle of the identified failed engine

Effects and recognition of Engine Failure in Turns/Effects of 'inside' engine failure

- ✓ More pronounced yaw
- ✓ More pronounced roll
- ✓ More pronounced pitch down

Effects of 'outside' engine failure

- ✓ Less pronounced yaw
- ✓ Less pronounced roll
- ✓ Less pronounced pitch down

Effect of Varying Speed and Power

- ✓ Failure of one engine at cruise speed and power. (engine failure clearly recognized)
- ✓ Failure of one engine at low speed and high power (not below Vsse) (engine failure most positively recognized)
- ✓ Failure of one engine at higher speeds and low power (possible failure to recognize engine failure)

Minimum Control speeds

- ✓ Establish the Vyse
- ✓ Select maximum permitted manifold pressure and RPM
- ✓ Close the throttle on one engine

- ✓ Raise the aeroplane nose and reduce the airspeed

Note the airspeed when maximum rudder deflection is being applied and when: directional control can no longer be maintained

- ✓ Lower the aeroplane nose and reduce power until full directional control is regained - the lowest airspeed achieved prior to the loss of directional control will be the Vmc for the flight condition
- ✓ Repeat the procedure closing the throttle of the other engine
- ✓ The higher of these two airspeeds will identify the most critical engine to fail

IMMEDIATE ACTIONS:

- ✓ Maintenance of control and use of power
- ✓ Identification of failed engine
- ✓ Confirmation of failed engine
- ✓ Failure cause and fire check
- ✓ Feathering decision and implementation
- ✓ Reduction of any other drag, e.g. flaps, cowl flaps etc.
- ✓ Re-trim and maintain altitude

SUBSEQUENT ACTIONS:

- ✓ Live Engine Oil temperature and pressure. Fuel flow and power
- ✓ Electrical load -assess and reduce as necessary
- ✓ Effect on power source for air driven instruments
- ✓ Landing gear
- ✓ Flaps and other services

Re-plan Flight:

- ✓ ATC and weather
- ✓ terrain clearance
- ✓ single-engine cruise speed
- ✓ decision to divert or continue
- ✓ Fuel Management (x-feed)
- ✓ Cruising, climbing -ASI colour coding (blue line), descending, turning
- ✓ 'Live' Engine Limitations and Handling

Exercise 54: ASYMMETRIC POWER FLIGHT "Take-Off and Approach"

EXERCISE OBJECTIVE: ASYMMETRIC POWER FLIGHT. To improve applicant's confidence with single engine operations.

COMPLETION STANDARDS: The student will demonstrate the newly introduced manoeuvres and procedure using correct operating techniques, coordination, smoothness, and understanding.

Pre-flight Discussion and Briefing

- ✓ Review the principles of asymmetric flight and actions following an engine failure
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets

Flight lesson

- ✓ Take-Off and Approach -Control and handling
- ✓ Take-off case with Landing Gear Down and Take-Off Flap Set
- ✓ Significance of Take-Off at or above Safety Speed at safety speed. The ability to maintain control and to accelerate to SE climb speed with aeroplane clean and zero thrust set. Thereafter to achieve a positive climb.
- ✓ Significance of flight below Safety Speed below safety speed and above Vmca. A greater difficulty to maintain control, a possible loss of height whilst maintaining speed, cleaning up, accelerating to SE climb speed and establishing a positive climb.
- ✓ Significance of Best Single-engine Climb Speed the ability to achieve the best rate of climb on one engine with minimum delay.
- ✓ Significance of Asymmetric Committal Height the ability to maintain or accelerate to the best single-engine rate of climb speed and to maintain heading whilst cleaning up with perhaps a slight height loss before climbing away below this height, the aeroplane is committed to continue the approach to a landing.

Engine Failure during Take-Off

- ✓ During the take-off run and below safety speed briefing only
- ✓ Engine Failure after take-Off
- ✓ Immediate Actions:
    - o Control of direction and use of bank
    - o Control of airspeed and use of power
    - o Recognition of asymmetric condition
    - o Identification and confirmation of failed engine feathering and reduction of drag (procedure for type)
- ✓ Subsequent Actions. Whilst carrying out an asymmetric power climb to the downwind position at single-engine best rate of climb speed:
    - o Live engine, handling considerations
    - o Fuel management

- ✓ Asymmetric Circuit, Approach and Landing
  - o Downwind and Base Legs
  - o Use of standard pattern
  - o Normal procedures
  - o Landing gear and flap lowering considerations
  - o Position for base leg
  - o Live engine handling
  - o Airspeed and power settings
  - o Maintenance of height
- ✓ Final Approach
  - o Asymmetric Committal Height drill
  - o Control of airspeed and descent rate
  - o Flap considerations
- ✓ Going Round Again on Asymmetric Power (Missed Approach)
  - o Not below Asymmetric Committal Height
  - o Speed and heading control
  - o Reduction of drag, landing gear retraction . -maintaining Vyse
  - o Establish positive rate of climb

2.11 Instrument Rating Instructor IRI(A) Course

2.11.1 Course Structure

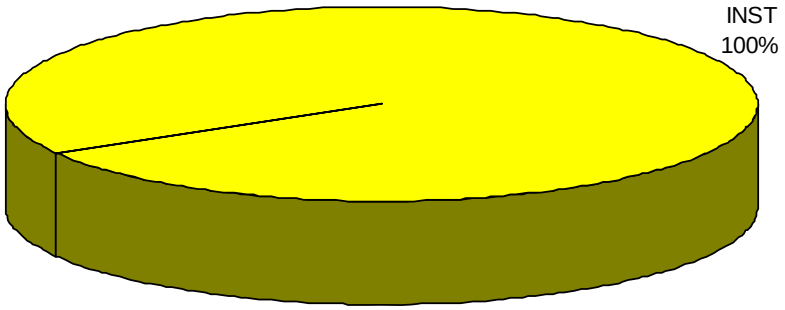
The course objective is to give adequate training to the applicant in flight instruction in order to instruct the syllabi of the instrument rating course. The course is intended to develop the trainees handling skills whilst operating the aircraft from the both the left and right hand seats. He will be exposed to the operation of the appropriate aeroplane and will be required to demonstrate his proficiency in this area. The course aims to develop, in a constructive manner, the trainee's skills to present flight briefings, impart knowledge, assess performance and conduct debriefing.

The flying training in Global Air Services for the IRI(A) course shall comprise a total of at least 10 hours, not include flying tests.

The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide.

At the beginning of the course the student instructor have to be capable to brief the student(s) on the fundamentals of Basic Attitude Instrument flying. The purpose of this brief is to begin to create a foundation and understanding of the basic skills and techniques required to instruct the control of an aircraft solely by reference to instruments.

The air exercises of the course are analyzed in the following table:



IRI(A) Course	DUAL	SOLO	X-C D	X-C S	INST	SPIC	MULTI	BRIEF
Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTIDUTES)					0,5			4
Exercise 31: Unusual Attitudes and Recovery					0,5			
Exercise 32 Use of Partial Panel					0,5			
Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR					0,5			
Exercise 34: Radio Navigation (Applied Procedures) Use of ADF					0,5			
Exercise 35: Radio Navigation (Applied Procedures) Use of DME					0,5			
Exercise 36: VOR Non - Precision Approach Procedure					1			
Exercise 37: NDB Non - Precision Approach Procedure					1			
Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures					1			
Exercise 39: Precision Approach Procedure					1			
Exercise 40: Long IR X-Country					1			
Exercise 42: Night Rating		0			2			3
	0	0	0	0	10	0	0	7
	DUAL	**SOLO**	**X-C D**	**X-C S**	**INST**	**SPIC**	**MULTI**	**BRIEF**
TOTALS	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**7**
Exercise 60 FINAL CHECK					**1**			

Exercise 30: INSTRUMENT FLYING (REVIEW of BASIC ATTITUDES)

EXERCISE OBJECTIVE: To develop the student's confidence of attitude instrument flying and review the basic fundamentals of controlling the aircraft solely by reference to instruments beginning with pitch control, bank control, power control and the corresponding performance indications derived from each one. BASIC ATTITUDES

Note 1: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of basic flight manoeuvres by reference to flight instruments. Altitude ± 100 feet, heading ± 10º and airspeed ±10 knots.

Pre-flight Discussion and Briefing INSTRUMENT FLYING (BASIC)

- ✓ Introduction to the Use of the Attitude Indicator
- ✓ Pitch Attitude & Bank Attitude
- ✓ Maintenance of Heading and Balanced flight
- ✓ Instrument Limitations (inc. System Failures)
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instrument Indications

THE BASIC FLIGHT MANOEUVRES (FULL PANEL & PARTIAL PANEL)

- ✓ Straight and Level Flight at Various Airspeeds and Aeroplane Configurations
- ✓ Climbing & Descending
- ✓ Standard Rate Turns
- ✓ Climbing & Descending Onto Pre-Selected Headings

Flight Lesson (Review) Air Exercise Instrument Flying PATTERN 'A'

- ✓ Pitch Attitude
- ✓ Bank Attitude
- ✓ Maintenance of Heading and Balanced Flight
- ✓ Effect of Changing Power and configuration
- ✓ Cross Checking the Instruments
- ✓ Standard Rate Turns

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Exercise 31: Unusual Attitudes and Recovery

EXERCISE OBJECTIVE: To continue develop the student's ability to control the aircraft solely by reference to instruments by rate/timed climbs, descends, and turns. Vertical S, Pattern B and unusual flight attitudes

COMPLETION STANDARDS: The lesson will have been successfully completed when the student demonstrate with minimum assistance from the instructor that he has an understanding of the concept attitude instrument flying and of the performance of advanced flight manoeuvres by reference to flight instruments. Altitude ± 50 feet, heading ± 5º and airspeed ±5 knots.

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Vertical S, manoeuvres
- ✓ Discuss Pattern B (Review)
- ✓ Compass Turns
- ✓ Review lesson objectives and establish targets
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight Lesson (Review)

- ✓ Air Exercise Instrument Flying PATTERN 'B'
- ✓ Rate/timed Climbs, turns and descents
- ✓ Vertical S, manoeuvres
- ✓ Standard rate turns
- ✓ Climbing and descending turns
- ✓ Compass Turns

Flight Lesson

- ✓ Power off Stalls
- ✓ Power on Stalls
- ✓ Slow Flight
- ✓ Recovery from Unusual Flight Attitudes

Exercise 32 Use of Partial Panel

EXERCISE OBJECTIVE: To review full panel instrument flight and to introduce partial panel attitude instrument flying including related systems and equipment malfunctions. Partial Panel

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: The student will begin to recognize and understand the effect of instrument systems and equipment malfunctions and also recognize the change in instrument cross-check necessary to maintain aircraft control while using partial panel procedures

Pre-flight Discussion and Briefing

- ✓ Discuss rate/timed climbs, descents and turns
- ✓ Discuss Compass Turns
- ✓ Review Rate/timed Climbs, turns and descents PATTERN 'A' & 'B'
- ✓ IFR Aircraft Systems
- ✓ IFR Takeoff Preparations

Flight lesson review Full panel manoeuvres

- ✓ Vertical S manoeuvres
- ✓ Pattern A and B

Flight Lesson Introduce Partial Panel

- ✓ Straight-and-level Flight
- ✓ Standard rate turns
- ✓ Constant Airspeed Climbs/Descends
- ✓ Change of Airspeed
- ✓ PATTERN 'A' & 'B' (PARTIAL PANEL)

Exercise 33: Radio Navigation (Applied Procedures) Use Of VOR

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to VOR radial intercepting tracking and VOR holding.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of VOR Stations En-Route and Station Frequencies and Identification Coding - Signal Reception Range
- ✓ Effect of Altitude
- ✓ VOR Radials
- ✓ Use of Omni Bearing Selector and To/From Indicator - Selecting Radials
- ✓ Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Effects of Wind - Maintaining a Radial
- ✓ Tracking To/From a VOR Station
- ✓ Procedure Turns
- ✓ Station Passage (Review)
- ✓ Use of Two Stations for Obtaining a Fix (Review)
- ✓ Pre-Selecting Fixes along a Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures
- ✓ Various Entries
- ✓ Communication (R/T Procedures and ATC Liaison)

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use Of VOR

- ✓ Station Selection and Identification – Orientation
- ✓ Intercepting a Pre-Selected Radial
- ✓ Maintaining a Radial Inbound
- ✓ Recognition of Station Passage
- ✓ Maintaining a Radial Outbound
- ✓ Procedure Turns
- ✓ Set of Two Stations to Obtain a Fix along the Track
- ✓ Assessment of Distance and Time to station
- ✓ Holding Procedures Entries (Holding at a Pre-Selected Fix and Holding at a VOR Station)

Exercise 34: Radio Navigation (Applied Procedures) Use of ADF

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to NDB radial intercepting tracking and NDB holding. RADIO NAVIGATION (APPLIED PROCEDURES) USE OF ADF (AUTOMATIC DIRECTION FINDING EQUIPMENT)

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of NDB (Non Directional Beacons) Facilities En-Route
- ✓ Location, Frequencies, Tuning (as applicable) and Identification Codes, Signal Reception Range
- ✓ Static Interference, Night Effect, Station Interference (AM), Mountain Effect, Coastal Refraction
- ✓ Orientation in Relation to a NDB and Homing
- ✓ Intercepting a Pre-Selected Magnetic Bearing, Tracking Inbound Station Passage and Tracking outbound
- ✓ Time/Distance Estimation
- ✓ Use of Two NDBs to Obtain a Fix or alternatively use of One NDB and One other Navaid
- ✓ Holding Procedures and Various Approved Entries

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial
- ✓ Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station

Flight Lesson Introduce Radio Navigation (Applied Procedures) Use of ADF

- ✓ Selecting, Tuning and Identifying a NDB
- ✓ ADF Orientation
- ✓ Homing
- ✓ Tracking Inbound
- ✓ Station Passage
- ✓ Tracking Outbound
- ✓ Time/Distance Estimation
- ✓ Intercepting a Pre-Selected Magnetic Bearing
- ✓ Determining the Airplane's position from Two NDBs or alternatively from One NDB and One Other Navaid
- ✓ ADF Holding Procedures
- ✓ Various Approved Entries

Exercise 35: Radio Navigation (Applied Procedures) Use of DME

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce DME, SSR and GPS to the student.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Availability of DME, SSR and TACAN Facilities, Location, Frequencies and Identification Codes
- ✓ Signal Reception Range and Slant Range
- ✓ Use of DME, GPS to obtain Distance, Groundspeed and Minutes to Run
- ✓ Use of DME to obtain a Fix (use KEA, DDM, ATH, TGG)

Flight lesson review

- ✓ Intercepting a Pre-Selected VOR Radial and Maintaining a VOR Radial Inbound/Outbound
- ✓ Holding at a VOR Station
- ✓ Intercepting a Pre-Selected NDB Radial and Maintaining a NDB Radial Inbound/Outbound
- ✓ Assessment of Groundspeed and ETA's using VOR and NDB
- ✓ Holding at a NDB Station

Flight Lesson Introduce Air Exercise Use of DME

- ✓ Station Selection and Identification, Use of Equipment Functions
- ✓ Distance, Groundspeed and Time to Run
- ✓ DME Arc Approach (Use LGTG DME approach)
- ✓ DME Holding

Use of Transponder

- ✓ Operation of Transponders, Code Selection Procedure, Emergency Codes

Exercise 36: VOR Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures VOR Approaches.

Note: The recommended minimum may be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGTG approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including DME ARC at LGTG approach
- ✓ Initial Approach to the VOR
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The Inbound Procedure
- ✓ Re-Check of Identification Code and Altimeter Setting

- ✓ The Final Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 37: NDB Non - Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments. To introduce the student to non-precision approach procedures NDB Approaches.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Non-Precision Approach Charts (use LGSK approach)
- ✓ Initial Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ ATC Liaison and Communication (ATC Procedures and R/T Phraseology)
- ✓ Holding Procedure
- ✓ The Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Initial Approach Procedure
- ✓ Operating Minima
- ✓ Completion of Approach Planning
- ✓ Achieving the Horizontal and Vertical Patterns. Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix (FAF) to the Aerodrome
- ✓ Use of DME (as applicable)
- ✓ Go around and Missed Approach Procedure
- ✓ Review of the Published Instructions
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions)
- ✓ Visual Manoeuvring after an Instrument Approach
- ✓ Circling Approach
- ✓ Visual Approach to Landing

Pre-flight Discussion Flight Lesson Introduce Air Exercise Non - Precision Approach Procedure

- ✓ Completion of Approach Planning including VOR HOLDING at SKP and approach to LGSK
- ✓ Initial Approach to the NDB
- ✓ Go Around and Missed Approach Procedure
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ ATC liaison and R/T Phraseology
- ✓ Assessment of Time from Final Approach Fix to the Missed Approach Point
- ✓ Holding at the Fix Aid
- ✓ The Outbound Procedure (incl. Completion of Pre-Landing Checks}
- ✓ The NDB Inbound Procedure

- ✓ Re-Check of Identification Code and Altimeter Setting
- ✓ The Final NDB Approach
- ✓ Maintaining the Final Approach Track
- ✓ Minimum Descent Altitude/Height
- ✓ Go around and Missed Approach Procedure
- ✓ Transition from Instrument to Visual Flight (Sensory Illusions}

Exercise 38: Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a IR x-country flight. To also review to the student the non-precision approaches procedures NDB and VOR Approaches. The student must be prepared for IR flight to LGSK or LGZA or LGKF or LGMK (full stop) and IR departure to LGMG.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Note: The recommended minimum will be completed in more than one sortie

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation), AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 39: Precision Approach Procedure

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a x-country flight.

Note 1: The recommended minimum may be completed in more than one sortie

Note 2: In the first flight use the nearest ILS's LGAV (A prior ATC approval is required to be obtained by the instructor for ILS approach without landing), LGTG or LGEL. For the next flights use LGTS without full stop landing (If a full stop landing is performed the student will be charged the landing fees) or LGPZ.

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives

Pre-flight Discussion and Briefing

- ✓ Precision Approach Charts
- ✓ Approach to the Initial Approach Fix and Minimum Sector Altitude
- ✓ Navaid Requirements, e.g. Radar, ADF, etc.
- ✓ Communication (ATC Liaison and R/T Phraseology)

Review:

- ✓ Holding Procedure
- ✓ The Final Approach Track
- ✓ Forming a Mental Picture of the Approach
- ✓ Completion of Aerodrome Approach Checks
- ✓ Initial Approach Procedure
- ✓ Selection of the ILS Frequency and Identification of Coding
- ✓ Operating Minima
- ✓ Achieving the Horizontal and Vertical Patterns
- ✓ Assessment of Distance, Groundspeed Time, and Rate of Descent from the Final Approach Fix to the
- ✓ Use of DME {as applicable)
- ✓ Go Around arid Missed Approach Procedure
- ✓ Review of the Published Instructions

Flight Lesson Introduce Air Exercise Precision Approach Procedure

- ✓ Initial Approach to the ILS
- ✓ Holding Procedure
- ✓ Frequency Selection and Identification of ILS
- ✓ Review of the Published Procedure and Minimum Safe Sector Altitude
- ✓ Communication {ATC Liaison and R/T Phraseology)
- ✓ Determination of Operating Minima and Altimeter Setting
- ✓ ILS Entry Methods
- ✓ Radar Vectors

- ✓ The Descent Rate on Final Approach
- ✓ Maintaining the Localizer and Glide Path
- ✓ Decision Height
- ✓ Missed Approach Procedure

Exercise 40: Long IR X-Country

EXERCISE OBJECTIVE: To continue to develop the student's competence in flight by reference to instruments, while working with ATC on a long IR x-country flight. The student must be prepared for IR flight and DME ARC to LGIR and ILS approach to LGRP.

Note: The recommended minimum will be completed in more than one sortie

COMPLETION STANDARDS: This lesson will have been successfully completed when the student can complete all assigned tasks and meet lesson objectives.

Pre-flight Discussion and Briefing

- ✓ Availability of Radar Services (Location, Station Frequencies, Call Signs and Hours of Operation)
- ✓ AIP and NOTAMs
- ✓ Communication (R/T, Procedures and ATC Liaison) and Airspace Radar Advisory - Emergency Service
- ✓ Aircraft Separation Standards
- ✓ Obtaining the Departure Clearance
- ✓ Setting up Radio Navaids prior to Take-off e.g. VOR Frequencies, Required Radials, etc.
- ✓ Aerodrome Departure Procedures, Frequency Changes Altitude and Position .Reporting as required
- ✓ Standard Instrument Departure Procedures (SIDs), Standard Arrival Procedures (STARs)

Flight Lesson Introduce Use of En-Route Radar Pre-Flight and Aerodrome Departure and Arrival Procedures

- ✓ Communication (R/T Procedures and ATC Liaison)
- ✓ Establishing the Service Required and Position Reporting
- ✓ Radio Equipment Serviceability Checks
- ✓ Departure Clearance
- ✓ Navaid Selection Frequencies, Radials, etc.
- ✓ Aerodrome Departure Checks, Frequency Changes, Altitude and Position Reports
- ✓ Standard Instrument Departure Procedures (SIDs) and Standard Arrival Procedures (STARs)

Exercise 42: Night Rating

EXERCISE OBJECTIVE: To develop the instructor's student ability to make evaluation of a student solo night flight in the local practice area and airport traffic pattern. To familiarize the student with such aspects of night operations as: night vision, night orientation, and judgment of distance, use of cockpit lights, position lights, landing lights, and night emergency procedures

COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
- ✓ Review performance planning/weight and balance
- ✓ Review lesson objectives and establish targets
- ✓ Night vision and vertigo
- ✓ Orientation in local area
- ✓ Judgment of distance
- ✓ Aircraft lights
- ✓ Airport lights
- ✓ Taxi technique
- ✓ Takeoff and landing technique
- ✓ Collision avoidance
- ✓ Unusual attitude recovery
- ✓ Emergencies

Flight Lesson Dual Basic Night Flying

- ✓ Start up procedures
- ✓ Local procedures -including ATC liaison
- ✓ Taxiing
- ✓ Parking area and taxiway lighting
- ✓ Judgment of speed and distances
- ✓ Use of taxiway lights
- ✓ Avoidance of hazards -obstruction lighting
- ✓ Instrument checks
- ✓ Holding point -lighting procedure
- ✓ Initial familiarization at night
- ✓ Local area orientation
- ✓ Significance of lights on other aircraft
- ✓ Ground obstruction lights

- ✓ Division of piloting effort -external/instrument reference
- ✓ Aerodrome lighting -Approach and runway lighting (including VASI and PAPI)
- ✓ Threshold lights
- ✓ Approach lighting
- ✓ Visual approach slope indicator systems

NIGHT CIRCUITS

- ✓ Line up
- ✓ Visual references during the take-off run
- ✓ Transfer to instruments
- ✓ Establishing the initial climb
- ✓ Use of flight instruments
- ✓ Instrument climb and initial turn
- ✓ The circuit
- ✓ Aeroplane positioning -reference to runway lighting
- ✓ The traffic pattern and lookout
- ✓ Initial approach and runway lighting demonstration
- ✓ Aeroplane positioning
- ✓ Changing aspect of runway lights and VASI (or PAPI). Intercepting the correct approach path
- ✓ Positioning, base leg and final approach
- ✓ Use of landing lights
- ✓ The flare and touchdown
- ✓ The roll out
- ✓ Turning off the runway -control of speed
- ✓ Missed approach. Use of instruments - Re-positioning in the circuit pattern

NIGHT NAVIGATION

- ✓ Particular emphasis on flight planning
- ✓ Selection of ground features visible at night
- ✓ Effect of cockpit lighting on map colours
- ✓ Use of radio aids
- ✓ Effect of moonlight upon visibility at night
- ✓ Emphasis on maintaining a 'minimum safe altitude'
- ✓ Alternate aerodromes -restricted availability
- ✓ Restricted recognition of weather deterioration
- ✓ Lost procedures

NIGHT EMERGENCIES

- ✓ Radio failure
- ✓ Failure of runway lighting
- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
- ✓ Failure of aeroplane navigation lights
- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure

2.12 Flight Instructor (FI)/Instrument Rating Instructor (IRI)/ Class Rating Instructor (CRI) refresher seminar

2.12.1 Course Structure

Not applicable

2.13 Instrument Rating (IR(A)) / Class Rating (MEP(A)) refresher seminar

2.13.1 Course Structure

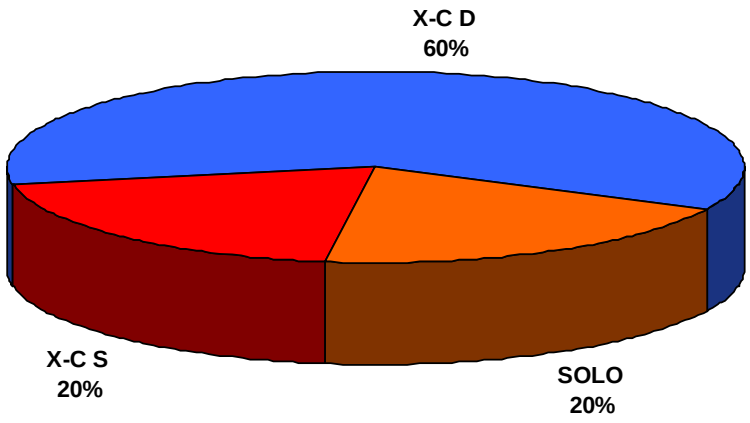
Not applicable

2.14 Night Qualification

2.14.1 Course Structure

The course objective is to give adequate training to the applicant in order to exercise the privilege of his licence at night. The flying training comprises a total of at least 5 hours night flight instruction.

The 5 hours flight time in aeroplanes shall be completed at night comprising 3 hours of dual instruction including at least 1 hour of cross country navigation and 5 solo take offs and 5 solo full stop landings.



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COMPLETION STANDARDS: The lesson will have been successfully completed when the student displays the ability to maintain orientation in the local flying area and traffic pattern, can accurately interpret aircraft an runway lights, and can competently fly the traffic pattern and perform takeoffs and landings.

Pre-flight Discussion and Briefing

- ✓ Review current and forecast weather/Notams
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- ✓ Instrument checks
- ✓ Holding point -lighting procedure
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- ✓ Local area orientation
- ✓ Significance of lights on other aircraft

- ✓ Ground obstruction lights
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- ✓ The roll out
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- ✓ Failure of aeroplane landing lights
- ✓ Failure of aeroplane internal lighting
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- ✓ Total electrical failure
- ✓ Abandoned take-off
- ✓ Engine failure
- ✓ Obstructed runway procedure