

FLIGHT TRAINING
(AEROPLANE)
BASED ON JAR FCL - PPL(A)

FLIGHT INSTRUCTION
Syllabus

for

MARSPOLAR, DUBAI UAE

Exercise 1 Familiarisation with the aeroplane

- characteristics of the aeroplane
- cockpit layout
- systems
- check lists, drills, controls

Exercise 1E Emergency drills

- action in the event of fire on the ground and in the air
- engine cabin and electrical system fire
- systems failure
- escape drills, location and use of emergency equipment and exits

Exercise 2 Preparation for and action after flight

- flight authorisation and aeroplane acceptance
- serviceability documents
- equipment required, maps, etc.
- external checks
- internal checks
- harness, seat or rudder panel adjustments
- starting and warm up checks
- power checks
- running down system checks and switching off the engine
- parking, security and picketing (e.g. tie down)
- completion of authorisation sheet and serviceability documents

Exercise 3 Air experience

- flight exercise

Exercise 4 Effects of controls

- primary effects when laterally level and when banked
- further effects of aileron and rudder
- effects of:
 - airspeed
 - slipstream
 - power
 - trimming controls
 - flaps
 - other controls, as applicable
- operation of:
 - mixture control
 - carburettor heat
 - cabin heating/ventilation
- airmanship

Exercise 5 Taxiing

- 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
- airmanship

Exercise 5E Emergencies

- Brake and steering failure

Exercise 6 Straight and level

- at normal cruising power, attaining and maintaining straight and level flight
- flight at critically high airspeeds
- demonstration of inherent stability
- control in pitch, including use of trim
- lateral level, direction and balance, trim
- at selected airspeeds (use of power)
- during speed and configuration changes
- use of instruments for precision
- airmanship

Exercise 7 Climbing

- entry, maintaining the normal and max rate climb, levelling off
- levelling off at selected altitudes
- en-route climb (cruise climb)
- climbing with flap down
- recovery to normal climb
- maximum angle of climb
- use of instruments for precision
- airmanship

Exercise 8 Descending

- entry, maintaining and levelling off
- levelling off at selected altitudes
- glide, powered and cruise descent (including effect of power and airspeed)
- side slipping (or suitable types)
- use of instruments for precision flight
- airmanship

Exercise 9 Turning

- entry and maintaining medium level turns
- resuming straight flight
- faults in the turn – (in correct pitch, bank, balance)
- climbing turns
- descending turns
- slipping turns (or suitable types)
- turns onto selected headings, use of gyro heading indicator and compass
- use of instruments for precision
- airmanship

Exercise 10A Slow flight

NOTE: The objective is to improve the student's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane in balance while returning to normal airspeed.

- safety checks
- introduction to slow flight
- controlled flight down to critically slow airspeed
- application of full power with correct attitude and balance to achieve normal climb speed
- airmanship

Exercise 10B Stalling

- airmanship
- safety checks
- symptoms
- recognition
- clean stall and recovery without power and with power
- recovery when a wing drops
- approach to stall in the approach and in the landing configurations, with and without power, recovery at the incipient stage

Exercise 11 Spin avoidance

- airmanship
- safety checks
- stalling and recovery at the incipient spin stage (stall with excessive wing drop, about 45°)
- instructor induced distractions during the stall

NOTE 1: At least two hours of stall awareness and spin avoidance flight training shall be completed during the course.

NOTE 2: 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

- pre-take-off checks
- into wind take-off
- safeguarding the nosewheel
- crosswind take-off
- drills during and after take-off
- short take-off and soft field procedure/techniques including performance calculations
- noise abatement procedures
- airmanship

Exercise 13 Circuit, approach and landing

- circuit procedures, downwind, base leg
- powered approach and landing
- safeguarding the nosewheel
- effect of wind on approach and touchdown speeds, use of flaps
- crosswind approach and landing
- glide approach and landing
- short landing and soft field procedures/techniques
- flapless approach and landing
- wheel landing (tail wheel aeroplanes)
- missed approach/go around
- noise abatement procedures
- airmanship

Exercise 12/13E Emergencies

- abandoned take-off
- engine failure after take-off
- mislanding/go-around
- missed approach

In the interests of safety it will be necessary for pilots trained on nosewheel aeroplanes to undergo dual conversion training before flying tail wheel aeroplanes, and vice-versa.

Exercise 14 First solo

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

NOTE: During flights immediately following the solo circuit consolidation the following should be revised.

- procedures for leaving and rejoining the circuit
- the local area, restrictions, map reading
- use of radio aids for homing
- turns using magnetic compass, compass errors
- airmanship

Exercise 15 Advanced turning

- steep turns (45°), level and descending
- stalling in the turn and recovery
- recoveries from unusual attitudes, including spiral dives
- airmanship

Exercise 16 Forced landing without power

- forced landing procedure
- choice of landing area, provision for change of plan
- gliding distance
- descent plan
- key positions
- engine cooling
- engine failure checks
- use of radio
- base leg
- final approach
- landing
- actions after landing
- airmanship

Exercise 17 Precautionary landing

- full procedure away from aerodrome to break-off height
- occasions necessitating
- in-flight conditions
- landing area selection
 - normal aerodrome
 - disused aerodrome
 - ordinary field
- circuit and approach
- actions after landing
- airmanship

Exercise 18A Navigation

- Flight planning
- weather forecast and actuals

- map selection and preparation
 - choice of route
 - controlled airspace
 - danger, prohibited and restricted areas
 - safety altitudes
- calculations
 - magnetic heading(s) and time(s) en-route
 - fuel consumption
 - 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

- organisation of cockpit workload
- 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 nav aids
- minimum weather conditions for continuation of flight
- in-flight decisions
- transiting controlled/regulated airspace
- diversion procedures
- uncertainty of position procedure
- lost procedure

Arrival, aerodrome joining procedure

- ATC liaison in controlled/regulated airspace
- altimeter setting
- entering the traffic pattern
- circuit procedures
- parking
- security of aeroplane
- refuelling
- closing of flight plan, if appropriate
- post-flight administrative procedures

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

- actions prior to descending
- hazards (e.g. obstacles, and terrain)
- difficulties of map reading
- effects of wind and turbulence
- avoidance of noise sensitive areas
- joining the circuit
- bad weather circuit and landing

Exercise 18C **Radio navigation**

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

Use of automatic direction finding equipment (ADF) – non-directional beacons (NDBs)

- availability, AIP, frequencies
- selection and identification
- orientation relative to the beacon
- homing

Use of VHF direction finding (VHF/DF)

- availability, AIP, frequencies
- R/T procedures and ATC liaison
- obtaining a QDM and homing

Use of en-route/terminal radar

- availability, AIP
- 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 **Basic instrument flight**

- physiological sensations
- instrument appreciation
 - attitude instrument flight
- instrument limitations
- airmanship
- basic manoeuvres
 - straight and level at various airspeeds and configurations
 - climbing and descending
 - standard rate turns, climbing and descending, onto selected headings
 - recoveries from climbing and descending turns