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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

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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 of the stall

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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
– 3 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 circuitconsolidation 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

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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 navaids
– 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

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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

Use of Global positioning systems (if available)

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