CAVOK

CAVOK Aviation Training Ltd.

Flight Procedures

Tecnam P2002-JF type

Revision 04, 14 May 2019

1. Foreword

This guide has been prepared to provide pilots with information for the flight procedures based on the Aircraft Flight Manual. It is the responsibility of the pilot to study carefully the AFM, a deep knowledge of airplane features and limitations is essential for operating the airplane safely. Subtle differences in this document compared to the AFM are company based procedures that ensures the improvement of flight safety. The content of this document is approved by the Head of Training.

2. Flight preparation

2.1. Aircraft weight and CG definition, performance calculation

Based on the calculation method in the AFM define the aircraft **take-off weight** and CG position according the actual traffic load and ramp fuel. Also define the **landing weight** and CG position calculating with the estimated fuel consumption.

Section 5 PERFORMANCES in the **AFM** provides all necessary data for an accurate and comprehensive planning of flight activity from take-off to landing. Given information in that section is sufficient to plan the flight with the required precision and safety.

3. Pre-flight check

This chapter is an extract from **AFM Section 4 NORMAL PROCEDURES**. For detailed information about pre-flight inspections refer to that section.

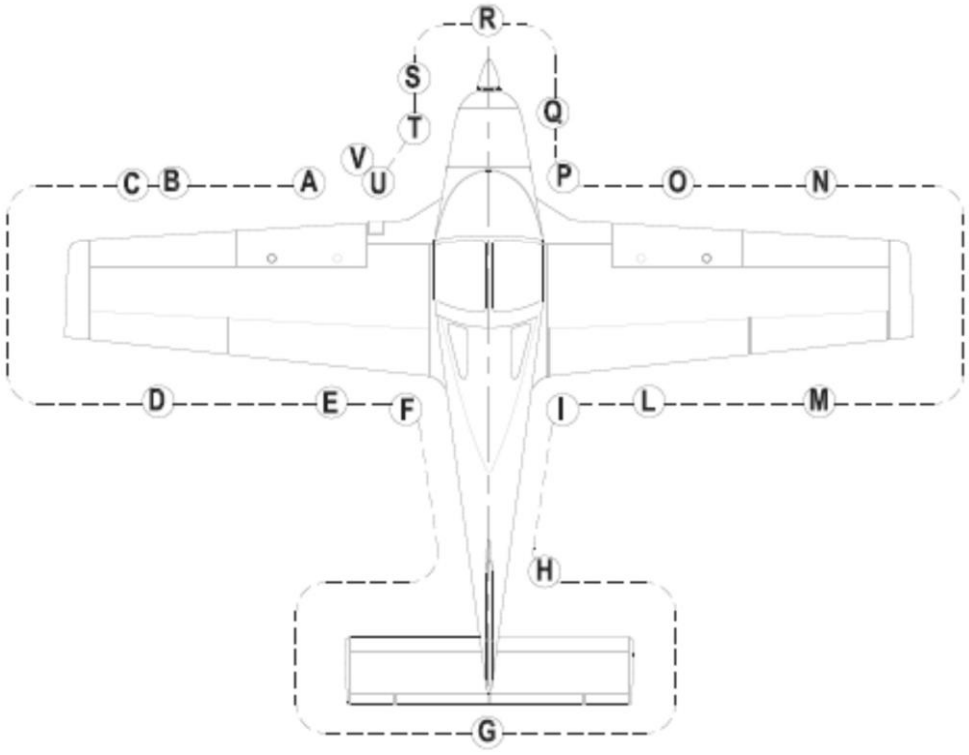
3.1. In the cockpit

- Check the **A/C documentation**
- Check **safety belts** condition
- Verify that **ignition** is in **OFF** and the start **key** is not inserted to the starter switch.

- Master switch ON, check Voltmeter (10-12V), check Ammeter (red), check the fuel quantities and compare it with the planned fuel amount
- Extend the flaps to FULL (in order to check outside)
- Master switch OFF
- Check ELT
- Check necessary cabin accessories (first aid kit, canopy hammer, fire extinguisher)

3.2. Aircraft walk-around:

To perform the aircraft walk-around, carry out the checklist according to the station shown below:



A. Left fuel filler cap:

- Check visually for desired fuel level
- Drain the left fuel tank by drainage valve using a cup to collect fuel. Drainage operation must be carried out with the aircraft parked on a level surface)
- Check for water or other contaminants

- Close filler cap

B. Remove protection plug (if provided) and check the Pitot tube and the static ports mounted on left wing are unobstructed. Do not blow inside vents.

C. Left side leading edge and wing skin:

- Visual inspection

D. Left aileron, trim tab and hinges:

- Visual inspection, check free play
- Friction
- Left tank vent: check for obstructions

E. Left flap and hinges:

- Visual inspection

F. Left main landing gear:

- Check inflation, tire condition, alignment, fuselage skin condition

G. Horizontal tail and tab:

- Visual inspection, check free play, friction

H. Vertical tail, rudder and trim tab:

- Visual inspection, check free play, friction **I.** Right main landing gear:
- Check inflation, tire condition, alignment, fuselage skin condition

L. Right flap and hinges:

- Visual inspection
-

M. Right aileron, trim tab and hinges:

- Visual inspection, check free play, friction

- Right side tank vent: check for obstructions **N.** Right leading edge and wing skin: - Visual inspection

O. Right fuel filler cap:

- Check visually for desired fuel level
- Drain the right fuel tank by the drainage valve using a cup to collect fuel. Drainage operation must be carried out with the aircraft parked on a level surface
- Check for water or other contaminants - Close filler cap

P. Set the fuel selector valve to OFF. Drain circuit using a cup to collect fuel by opening the specific drainage valve (part of the gascolator). Check for water or other contaminants.

Q. Nose wheel strut and tire:

- Check inflation, tire and rubber shock absorber discs condition

R. Propeller and spinner condition:

- Check for nicks, cracks, dents and other defects, propeller should rotate freely
- Check fixing and lack of play between blades and hub **S.** Open engine cowling:
- Check no foreign objects are present.
- Verify coolant level in the overflow bottle: level must be between min. and max. mark. Replenish if required.
- *Only before the first flight of the day:*
  a. *Verify coolant level in the expansion tank, replenish as required up to top (level must be at least 2/3 of the expansion tank).*
  b. *Turn the propeller by hand to and from, feeling the free rotation of 15°or 30° before the crankshaft starts to rotate. If the propeller can be turned between the dogs with practically no friction at all, further investigation is necessary. Turn propeller by hand in*

direction of engine rotation several times and observe engine for odd noises or excessive resistance and normal compression.

c. Carburetors: check the throttle cable condition and installation.

d. Exhaust: inspect for damages, leakage and general condition

- Check radiators. There should be no indication of leakage of fluid and they have to be free of obstructions.
- Check oil level and replenish as required. Prior to oil check, having magnetos switched off turn the propeller by hand in direction of engine rotation several times to pump oil from the engine into the oil tank, or let the engine idle for 1 minute. This process is finished when air is returning back to the oil tank and can be noticed by a murmur from the open oil tank. Prior to long flights oil should be added so that the oil level reaches the “max” mark.
- Inspect fuel circuit for leakages
- Check integrity of silent-block suspensions
- Check connection and integrity of air intake system, visually inspect that ram air intake is unobstructed
- Check that all parts are secured or safetied

T. Close engine cowling, check for proper alignment of cam-locks

U. Visual inspection of the Landing and Strobe Light

V. Remove tow bar and chocks, stow on board pitot, static ports and stall warning protective covers

4. Traffic circuit description

This chapter is an extract from **AFM Section 4 NORMAL PROCEDURES** containing information about the flight procedures for each phase of a normal traffic circuit. For detailed information refer to that section. As a visual aid a simple traffic circuit illustration can be found on page 18.

The RPM values in this document are propeller RPM values. RPM indicator in the cockpit panel is measuring the propeller RPM not the engine RPM. Engine RPM value divided by 2,4286 is equal to prop RPM. 3.3.

4.1 Cockpit preparation before engine starting

- Seat position and safety belts adjustment
- Fasten seatbelts

  Close and **lock canopy(3 point**) or **fix** it in open position**(1point)**
- **Prohibited to start the engine with unfixed canopy!**
- Check fuel valve open
- Parking brake: apply brakes with left hand then engage with right hand.

4.2. Engine start up

- Master switch,Generator switch ON
- Electric fuel pump: ON
- Choke: as needed (ON for cold start, OFF for hot start)
- Fuel pressure check

  Strobe on

  Propeller area: call for CLEAR from outside verbally and by holding left hand thumb up

- PROP CLEAR?!!!
- Engine throttle: idle (left hand)
- Push Key to starter(right hand)

- Magnetos: BOTH
- Magnetos: START

  At the first starting sound increase thrust a little bit

After start:

- Check oil pressure rise within 10 sec. (maximum cold value 7 bar)
- Set throttle to 1000-1100RPM, (at cold engine 1300RPM to warm up) , set throttle friction setting if needed
- Choke: OFF
- Fuel pump OFF
- Radios and avionics: Turn ON

4.2. Cockpit check before taxi

Consequently Check each switches and instruments from left to right, and from top to bottom, on the instrument panel and in the cockpit.

- Check suction (with short RPM increase)
- Elevator Trim: cycle fully up and down, from both left and right controls,
- Check for trim disconnect switch operation.
- Flap: set up to zero.
- Check Generator lamp, generator operation, Ammeter check “green”, Voltmeter: check more than 14V
- Check ELT Armed
- Check flight instruments
- Set QNH or aifield elevation
- Engine instruments: Check in normal range,
- Fuel Quantity and assimetry
- Change Fuel valve to higher value side
- Check cabin heating, Master and Gen switches on, Fuel pump OFF, Ignition BOTH, Choke OFF, Carb heat OFF, Flaps up, strobe ON
- Check circuit brakers on
- Activate GPS and Radios, Check local frequency on
- Transponder: STBY (set code 7000)

4.3. Taxi out

***RT**: -Gödöllő Traffic, Good Day!. HA-VOG request radio check!*

-H-OG after start up taxiing from the CAVOK hangar to the holding point of RWY 31/13

Left hand on the throttle, **right hand** on the brake.

- Check left hand side, right hand side, straight ahaed clear.
- Set idle power
- Release parking brake(with right hand) and increase power
- Brakes – Check
- Steering – Check

Taxi slowly! Use minimal power in straight lines, apply more power for initiating taxi and for the turns only. Do not fight the throttle with the brakes, decrease it to slow down instead.

4.4. Engine run-up check

- Stop at Holding Point and set Parking brake on, with two hands.
- Engine warm, parameters in green. Verify that pressures and temperatures are in the operative range.

Engine run-up test:

- Ignition magnetos check:
- Set RPM 1700
- Ignition switch LEFT, BOTH, RIGHT, BOTH - The drops shall not be higher than 130 RPM / side and the difference between the two side shall be less than 50 RPM. The engine shall run smooth with either circuit.

- Carburetor heating check:
- RPM 1700, pull Carb. heat knob fully out, it shall drop 50-100 RPM. Push it back, all parameters should restore to the previous value.

- Full power on ground – Check appr. 2100 RPM,
- Idle power – Check appr. 600 - 800 RPM
- Check oil pressure in green band at both power

When Pre-flight check, Cockpit check and Engine check completed the A/C is fit for flight. If you have found any abnormality during these, taxi back and call Maintenance!

4.5. Before T/O at the holding point

- Verify fuel quantity – sufficient for the task according to fuel requirements
- Fuel selector valve – Fullest tank
- Cabin canopy – Close and Check closed and locked on 3 points
- Pitch trim – Check neutral
- Align directional giro with the magnetic compass
- Fuel pump – ON
- Flaps 15
- Transponder to ALT mode
- Flight controls - Check free and logical movements and flaps position
- Check for any possible arriving traffic on final
- Check the runway for any departing traffic, crossing vehicle or people

***RT**: H-OG at the holding point of rwy 13/ 31 lining up and taking-off.*

At this pont or earlier report: -task: traffic circuit; airspace work or cross-country flight, -POB, and -PIC name.

When the RWY and Final clear

- Landing light – ON
- Release the parking brake with right hand
- Line up the plane

4.7. Take-off

Push forward the brake lever and move your right hand to control stick. Increase full power, keep the aircraft on runway centerline using the wheel steering and the rudder. Simultanously pull the control stick slightly to ease up the nose gear. Rotate the A/C smoothly at 50 KIAS. Start accelerating in a shallow climb and maintain **60** KIAS.

4.8. Climbing

- Maintain **60** KIAS with pitch attitude - At 200 ft AAL (in case of LHGD 900 ft QNH)
- Change hand

  Flaps Up

  Landing light – OFF

  -Change hand

  Fuel pump – OFF

Reduce the power to **2050** RPM

4.9. Turning to crosswind leg

At reaching 500 ft AAL turn to the crosswind leg.(In case of LHGD 1200 ft QNH) **(In case or LHGD RWY 31 left hand circuit: 1300ft QNH or above due to hill !)**

The speed in the turn shall be **65** KIAS so lower the nose to reach and maintain **65** KIAS, during the turn hold the pitch accordingly until the nose points to the new direction. When the turn is completed raise the nose again for the **60** KIAS equivalent attitude. This turn normally less than 90° because of the wind correction.

4.10. Turning to downwind leg

This turn shall be initiated when the landing threshold mark can be seen looking 30° behind the lateral axis. Take care of the wind correction on the downwind leg if there is crosswind so that the A/C track is parallel to the RWY centerline.

4.11. Transition to level flight

Level off to 1000 ft AAL(LHGD 1700ft QNH) with lowering the nose to maintain the circuit altitude. Let the A/C to accelerate through **75** KIAS and then set **1800-1900** RPM and trim the plane for level flight.

4.12. Downwind leg

Fly the aircraft parallel to the RWY centerline, correct for crosswind as necessary. At the beginning of downwind check location and track, check engine parameters and fuel assimetry. Change fuel tank if assimetry observed. When passed abeam of threshold, before the base turn, switch on the electric fuel pump, pull the carburetor heat and adjust power 50-100 more to compensate the effect of the carb heat. Report intention to turn base on the radio.

***RT**: H-OG turning LH/ RH base for RWY 31/13, -for touch and go/full stop landing*

4.13. Turning to base leg

The place for the base turn is when the threshold mark is 35° behind the lateral axis. This turn is a level turn and normally **more than 90° due** to the wind correction on the base leg.

After turning reduce the power to **1300** RPM and extend the flaps to **15**, landing light ON, then lower the nose for the descend and maintain **70** KIAS with the pitch.

4.14. Final turn

The place for starting the final turn is when the landing threshold is **10° in front of the lateral axis** and turn into the runway centerline. Arrange the turn to roll out **by 500 ft AAL latest**.(LHGD 1200 ft QNH) Increase the power slightly if necessary in order to reduce the descent rate. Maintain **70** KIAS during the turn and on the final.

4.15. Configuration the A/C for landing

Normal landing flaps is 40 (FULL).

The landing flap shall be extended to **40** earlier or later as the wind strength requires it. Reduce and check speed in the white arc (at or below 67 KIAS) before extending flaps to FULL.

-Speed checked

-Flaps **40**

As the flap extended to **40** lower the nose and increase power to **maintain 60 KIAS**.

Adjust the power and control the pitch in order to point the nose to the aiming point approximately 30 m in front of the threshold mark. With increasing power raise the nose and when reducing the power lower the nose so that the speed remains **60** KIAS.

At the short final

-Carb heat OFF

Landing

Reaching 20-5 meters height reduce the power to idle and break the angle of the approach. Start the flare at appr. 1 meter height from the ground. Finish the flare always **below** half meter height of the main wheels maintaining runway direction and wing levels. **Land the A/C to the main wheels with nose gear in the air.**

On Runways with hard pavement(asphalt,concrete):

- Use Flap **15**(T/O) for landing

- Avoid high flare or overflare the A/C or „stall" landing**!**

-Roll the main wheels on the pavement in „half flared" attitude.

In case of crosswind align the A/C axis with the rudder to fly parallel with the RWY and bank into the wind so that the plane will not move sideways from the landing axis. Land on the lower wheel in crosswind then let the other wheel down. Control the roll out with rudder and neutral the aileron as the speed drops.

Use flaps 15 (T/O) for landing if

- windspeed 15 kts or more

- crosswind component 10 kts or more

- the wind is so gusty or turbulency on the final that unable to maintain the approach speed between 60-67 KIAS)

- on hard pavement(asphalt,concrete)

-non normal situation (trim, flight control troubles etc.)

The approach speed with **Flaps 15 (T/O)** is **65 KIAS.**

Use Flaps 0 for landing in case of malfunctioning of the flaps only.

The approach speed with **Flaps 0 (UP)** is **70 KIAS**.

4.16. Full stop landing

After touch down maintain the RWY direction with the rudder and release the nose gear down immediatly but gently.

In case of full stop landing let the A/C decelerate, use light braking only as neccesary. At taxi speed vacate the RWY to the appropriate direction and report. Avoid stopping on the runway or unnessecarily occupying it.

***RT**:, H-OG RWY vacated.*

4.17. Touch and go

After touch down maintain the RWY direction with the rudder and **release the nose gear down** immediately but gently. Then change the hand to keep the stick in the left hand and retract the **flap to 15° (T/O) position**. Check/Set Carb Heat **OFF**!

- Flaps **15**

- Carb Heat **OFF**

Minimise to look inside the cockpit to be able to control the A/C running direction.

Change the hands back then apply **full power smoothly** and continue with take off run. If the remaining runway length is not enough for safe T/O, do full stop actions.

4.18. Go around

In case the **landing can't be completed safely** (due to other traffic, car or personnel on the RWY, the A/C is too high or low for the safe landing, the weather is not suitable for the landing, RWY is not visible or the instructor/controller advises so etc…) **go around must be flown**. Apply **full power** and maintain RWY track, turn off the carburetor heating. At the same time stop the descent, check speed increasing and **pitch up for climb attitude.** When the A/C starts to climb (**confirm** positive rate on **VSI**) retract the **flap slowly to 15° (T/O)** maintain **60** KIAS then proceed to fly a normal traffic circuit and report.

***RT**: H- OG Going around!*

4.19. Taxi in

If the RWY is vacated during taxi retract the landing flap to 0, turn the landing light OFF, set transponder to STBY and turn fuel pump OFF.

At higher temperatures allowed to open the canopy and taxi with it. **Stop the A/C,** open and **fix the canopy**(1 point), continue taxi.

Prohibited to open canopy at moving A/C or taxiing without fixed canopy!

***RT :** If situation clear: -H-OG taxiing to the CAVOK hangar; to the refueling place, holding point…etc.*

Stop the A/C at parking position, set parking brake with two hands.

4.20. Before engine shut down

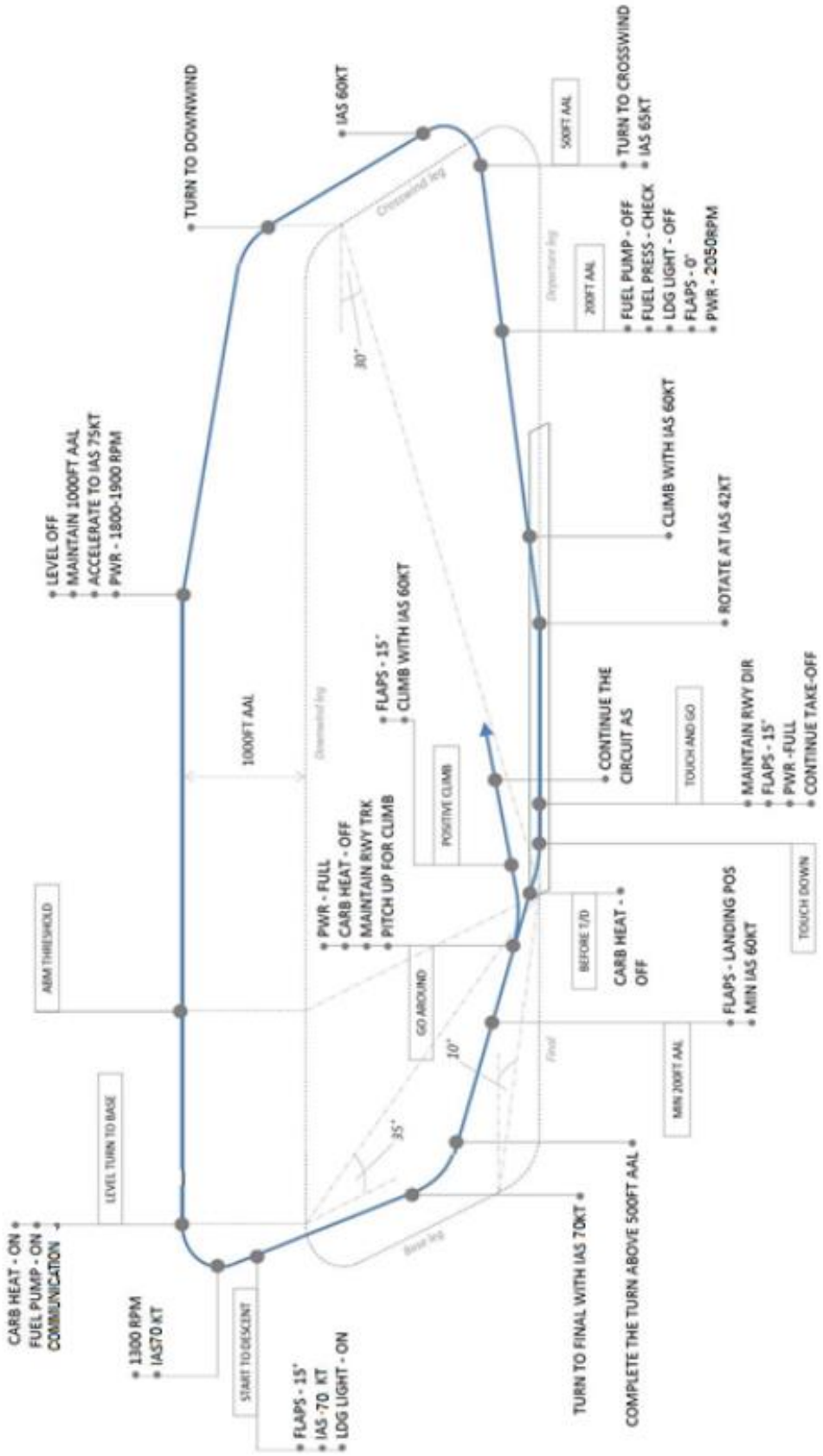
Turn off the radios,GPS and Transponder.

4.21. Shut down

Turn the ignition key to OFF and **pull the key out** from the ignition slot.

Then turn the Generator and Masterswitch and finally the Strobe to OFF. Put the key to the gyro instrument knob and open canopy.

4.22. Tecnam P2002-JF traffic circuit illustration (not to scale)


TURN TO DOWNWIND
IAS 60KT
500FT AAL
TURN TO CROSSWIND
IAS 65KT
Crosswind leg
Departure leg
200FT AAL
FUEL PUMP - OFF
FUEL PRESS - CHECK
LDG LIGHT - OFF
FLAPS - 0°
PWR - 2050RPM
30°
CLIMB WITH IAS 60KT
LEVEL OFF
MAINTAIN 1000FT AAL
ACCELERATE TO IAS 75KT
PWR - 1800-1900 RPM
ROTATE AT IAS 42KT
1000FT AAL
Downwind leg
FLAPS - 15°
CLIMB WITH IAS 60KT
CONTINUE THE CIRCUIT AS
TOUCH AND GO
POSITIVE CLIMB
MAINTAIN RWY DIR
FLAPS - 15°
PWR -FULL
CONTINUE TAKE-OFF
ABM THRESHOLD
PWR - FULL
CARB HEAT - OFF
MAINTAIN RWY TRK
PITCH UP FOR CLIMB
BEFORE T/O
CARB HEAT - OFF
TOUCH DOWN
GO AROUND
10°
Final
FLAPS - LANDING POS
MIN IAS 60KT
35°
LEVEL TURN TO BASE
MIN 200FT AAL
CARB HEAT - ON
FUEL PUMP - ON
COMMUNICATION
1300 RPM
IAS70 KT
Base leg
START TO DESCENT
TURN TO FINAL WITH IAS 70KT
COMPLETE THE TURN ABOVE 500FT AAL
FLAPS - 15°
IAS -70 KT
LDG LIGHT - ON

4.3 Emergency manouevers at LHGD

4.3.1 Rejected(aborted) take off

If the engine is operating abnormally during take off roll or the take off is not safe due to any reason

REJECT the TAKE OFF!

Set the thrust lever to idle and hold! Land the A/C as soon as possible with pulled (!) nose (to avoid landing to the nose wheel).

When on the ground release the nose immediatly down, release the control stick and pull brake lever with the right hand. Left hand is pulling the throttle.

Avoid obstacles with intensiv rudder input if nessecary.

-THRUST LEVER IDLE

-LAND THE A/C

-NOSE DOWN

-RELEASE STICK, PULL BRAKE

4.3.2 In case of engine failure in the traffic circuit:

Simultaneously:

- PITCH DOWN

- TURN TOWARDS SUITABLE LANDING SITE

- SPEED 70

After stabilized:

- FUEL PUMP ON

- CARBURETOR HEAT ON

- COMMUNICATE

When reaching the landing site:

- FLAPS AS REQUIRED

- Note that the gliding properties differ from an actual stopped propeller

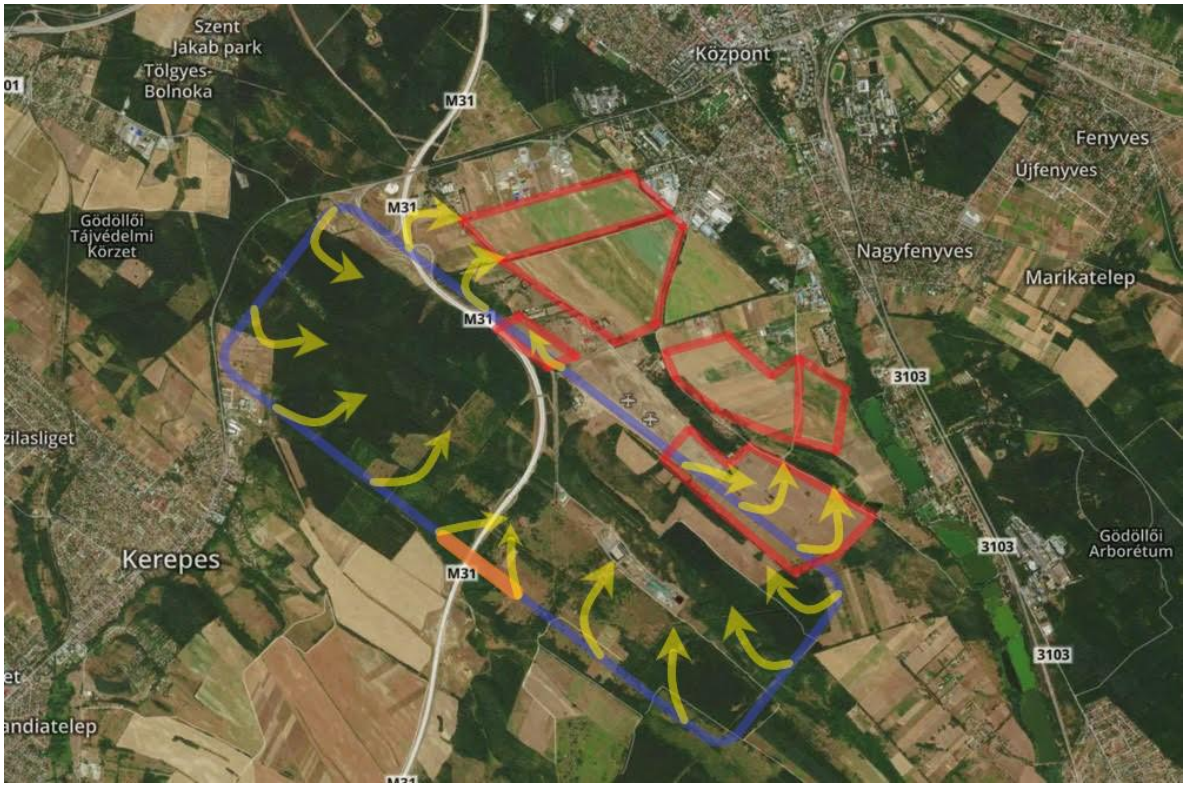
- When landing anywhere else than on airfield - use full flaps **40 (FULL)**

- Usually 1000ft AAL is a known altitude from which one can turn back to the airfield

- It is common to stall the plane on a steep turn back to the field with inadecuate pitch down

- Unofficially 45° bank angle is the maximum during an engine failure emergency. 45° increases the stalling speed by 20%

4.3.3 Emergency landing possibilities from traffic circuits



No.1 emergency landing place is the airfield!

- Blue marks the traffic circuit.
- Red marks the designated emergency landing areas where to turn when unable to complete the turn to reach the airfield.
- Yellow marks the direction of the first turn on each phase of the flight.
- Orange marks the abeam threshold area, where the pilot can choose according to the wind and circumstanses affecting - whether to land tailwind or headwind direction of the runway in use.

- **The emergency landing fields have several problems and their conditions may change! Details and actual informations by verbal briefing.**

5. Flight phase transition procedures

5.1. Transition from climb to level flight:

Climb:

- Speed: **60** KIAS
- Power: **2050** RPM

Lower the **nose to level** attitude position, let the plane to **accelerate to 75 KIAS and than set the power to 1800 RPM**. Reduce the right rudder input during this maneuver to keep the ball centered.

5.2. Transition from level flight to climb

Level flight:

- V/S: 0
- Power **1800** RPM

Raise the nose to the climb attitude, simultaneously **increase the power to 2050 RPM and adjust the speed to 60 KIAS**. Apply right hand rudder input when giving power to maintain the ball centered.

5.3. Transition from level flight to descent

Level flight:

- V/S: 0
- Power **1800** RPM

Switch Fuel pump and Carburator heating on. Reduce the power to **1300** RPM. Maintain level flight until the speed reduce to **70** KIAS, then lower the nose to descend attitude while maintain **70** KIAS. Some left rudder may be required to center the ball.

5.4. Transition from descent to level flight

Descent:

- Speed: **70** KIAS
- power: **1300** RPM
- Carb heat ON
- Fuel pump ON

Push the carburettor heating and fuel pump to OFF. Apply power to **1800** RPM and simultaneously raise the nose to the level flight attitude and maintain 0 vertical speed.

6. Remarks

6.1. Fuel selector valve operation in-flight

During cross country flight monitor and manually compensate asymetrical fuel consumption by switching fuel selector valve. The maximum allowed difference of fuel amount between the tanks is 12 litres (1/4 marking). Switch ON the electric fuel pump prior to swap the fuel feeding from one thank to another. Monitor the fuel pressure after switching fuel supply and turn the electric fuel pump off if the fuel pressure does not change.

Approaching Gödöllő from airspace work or cross country flight, check fuel 1 minute prior joining traffic pattern and change fuel tank if necessary.

7. Normal checklist

BEFORE START
MASTER ..... ON
BEACON ..... ON
FUEL PUMP ..... ON
FUEL SEL VALVE ..... LESS FUEL TANK
BRAKE LEVER ..... PULL
THROTTLE (COLD ENGINE: IDLE) 15%
CHOKE (COLD ENGINE) ..... PULL
PROPELLER AREA ..... FREE
IGNITION KEY ..... START

AFTER ENGINE START
OIL PRESSURE ..... CHECK
RPM 1000-1200

CHOKE ..... PUSH
GENERATOR ..... ON
FUEL PUMP .....OFF
ELECTRICAL EQUIPMENTS ..... ON

ENGINE TEST RUN
ENGINE PARAMETERS ..... IN GREEN
BRAKE LEVER ..... PULL
CONTROL STICK ..... PULL
RPM 1700
IGNITERS ..... 1, 2, ON 1700 RPM CHECK
RPM MAX 2100
CARB HEAT ..... CHECK
ENGINE IDLE ..... 570 – 660 RPM

BEFORE TAKE OFF
FUEL PUMP ..... ON
FUEL SEL VALVE ..... FULLEST TANK
FLAPS ..... 15°
CONTROLS ..... FREE

AFTER TAKE OFF (200' AAL)
FUEL PUMP .....OFF
FLAPS ..... 0°

BEFORE LANDING
FUEL PUMP ..... ON
FUEL SEL VALVE ..... FULLEST TANK
FLAPS ..... 15° OR FULL CARB
HEAT ..... AS REQUIRED

8. Tecnam P2002-JF aircraft data, limitations

Description	Values
Maximum Take-off / Landing Weight	*580 kgs*
Standard empty weight	*337 kgs*
Max Useful Load	*243 kgs*
Maximum baggage compartment load	*20 kgs*
Center of Gravity limit (Datum: from the propeller support flange without spacer) Forward limit (aft of datum for all weights) Aft limit (aft of datum for all weights)	 *1,693 m (26,0% MAC)* *1,782 m (32,5% MAC)*

Load limits in flight Flaps - CLOSED Flaps - EXTENDED	 *+3,8 g – -1,9 g* *+ 1,9 g – 0 g*
Oil capacity Min load Full load Oil temperature Min temperature Normal range Max temperature Oil pressure Min pressure Normal range Max pressure CHT Max CHT	 *2,0 l* *3,0 l* *50 °C* *90 - 110 °C* *130 °C* *0,8 bar* *2 - 5 bar* *7 bar* *135 °C*
Fuel Total load (Two tanks) Usable (Two tanks)	*RON 95* *100,0 l* *99,0 l*
Maximum engine power (HP)	*98,5 HP*
Propellel RPM Max RPM Take-off Max Continous Idle	 *2350-2450 RPM* *2200 RPM* *570-660 RPM*

Description	KIAS - Indicated Air Speed
Roration Speed (in take-off, V_R) (580 kg)	*50 kts*
Normal climb, flaps 15° Short field T.O, flaps 15°, speed until 50 ft AGL	*60 kts* *56 kts*
Normal climb speed flaps 0°	*60 kts*
Best Angle of Climb Speed - V_X flaps 0°	*56 kts*
Best Rate of Climb Speed - V_Y flaps 0°	*66 kts*
Best Glide Speed	*69 kts*

Stalling Speed (Bank angle 0) Most forward center of gravity (26% MAC) Idle power - flaps 0 (V_{S1}) Idle power - flaps T.O. - (V_{S1}) Idle power - flaps FULL - (V_{SO})	 *40 kts* *35 kts* *30 kts*
Approach Speed Normal approach - flaps T.O Final approach - flaps FULL	 *66 kts* *60 kts*
Maximum Flaps Extended Speed - V_{FE} Flaps - FULL Flaps - T.O.	*67 kts* *97 kts*
Design Maneuvering Speed - V_A	*96 kts*
Maximum Structural Cruising Speed - V_{NO}	*110 kts*
Never Exceed Speed - V_{NE}	*138 kts*
Maximum cross-wind	*22 kts*

9. Tecnam P2002-JF emergency procedures

This chapter contains a brief list only about the airplane emergency procedures. It is mandatory to become thoroughly familiar with the emergency procedures before operating this aircraft. For complete information refer **AFM Section 3 EMERGENCY PROCEDURES**.

9.1. Malfunctions

9.1.1. Electric power system malfunction

- Generator switch – OFF
- Master switch – OFF
- Generator switch – ON
- Master switch – ON

If the problem persists:

- Generator switch – OFF
- Non-vital electric equipment – OFF

9.1.2. Electrical fuel pump failure

- Fuel pump – OFF
- Fuel pump – ON
- Fuel pressure – CHECK raise

If fuel pressure doesn't build up:

- Land ASAP monitoring fuel pressure

9.1.3. Trim system failure

9.1.3.1. Locked control

- Circuit breakers – CHECK
- Trim switch LH/RH – CHECK for correct position
- Airspeed – Adjust to control A/C without exessive stick force
- Land ASAP

9.1.3.2. Trim runaway

- Trim disconnect switch – OFF
- Airspeed – Adjust to control A/C without exessive stick force
- Land ASAP

9.2. Airplane evacuation

- Fuel selector valve – OFF
- Throttle – IDLE
- Ignition – OFF
- Electric fuel pump – OFF
- Master switch – OFF
- Seat belts – Unstrap completely
- Headphones – Remove
- Cabin canopy – OPEN

If the canopy doesn't slide break it using the hammer, escape away from flames / hot engine compartment / spilling fuel tank.

9.3. Engine failure

9.3.1. Engine failure before take-off

- Throttle – IDLE
- Rudder – Keep heading control
- Brakes – Apply as needed

When safely stopped:

- Ignition key – OFF
- Fuel selector valve – OFF
- Fuel pump – OFF
- Generator – OFF
- Master switch – OFF

9.3.2. Engine failure after take-off

Immediate landing should be planned straight ahead with only small changes in directions not exceeding 45° to the left and 45° to the right.

- Maintain airspeed – 69 KIAS
- Flaps – As needed Before touch-down:
- Throttle – IDLE
- Ignition key – OFF
- Fuel selector valve – OFF
- Fuel pump – OFF
- Generator – OFF
- Master switch – OFF
- Landing – Ahead avoiding obstacles, if any

9.3.3. Engine failures in-flight

9.3.3.1. Low fuel pressure

If the fuel pressure indicator falls below 2.2 psi (0.15 bar):

- Electric fuel pump – ON
- Fuel selector valve – Change the fuel feeding tank
- Fuel quantity - Verify

If fuel pressure doesn't build up:

- Land ASAP monitoring fuel pressure

If engine stops:

- Land ASAP applying forced landing procedure

9.3.3.2. Oil pressure limits exceedance

If oil pressure exceeds upper limit (7 bar):

- Throttle – REDUCE as practical
- Oil pressure & temp – CHECK within limits
- Land as soon as practical

If oil pressure is under the lower limit (0,8 bar):

- Throttle - REDUCE minimum practical
- Land as soon as practical

If oil pressure continues to decrease:

- Land ASAP applying forced landing procedure

9.3.3.3. High oil temperature

If oil pressure is within limits:

- Throttle – REDUCE minimum practical

If oil temperature does not decrease:

- Airspeed – INCREASE
- Land as soon as practical

If engine roughness, vibrations, erratic behaviour, or high CHT is detected:

- Land ASAP applying forced landing procedure

9.3.3.4. CHT limit exceedance

If CHT is above 135°C:

- Throttle – REDUCE Minimum practical
- Land as soon as practical

If CHT continues to rise and engine shows roughness or power loss:

- Land ASAP applying forced landing procedure

9.3.4. In-flight engine restart

After a mechanical engine seizure, fire or a major propeller damage engine restart is not recommended. It is preferred to restart the engine at an altitude below 4000ft and at the suggested speed of 69 KIAS or more.

- Carb heat – ON if required
- Fuel pump – ON
- Fuel quantity indicator – CHECK
- Fuel Selector – Change the fuel feeding tank
- Ignition key – BOTH
- Ignition key – START
- Throttle – SET as required

In case of unsuccessful engine restart:

- Engine – SECURE
- Land ASAP

9.3.5. Engine securing

Following procedure is applicable to shut-down the engine in flight:

- Throttle – IDLE
- Ignition key – OFF
- Fuel selector – OFF
- Fuel pump – OFF
- Generator – OFF

9.4. Engine fire / Electrical smoke

9.4.1. Engine fire on ground

- Fuel Selector – OFF
- Fuel pump – OFF
- Ignition key – OFF
- Throttle - FULL power
- Cabin Heat – OFF
- Generator – OFF
- Master Switch – OFF
- Aircraft Evacuation – Carry out immediately

9.4.2. Engine fire during take-off

Before rotation, abort take-off:

- Throttle – IDLE
- Rudder – Keep heading control
- Brakes – Apply as needed With A/C under control:

- Fuel selector valve – OFF
- Fuel pump – OFF
- Ignition key – OFF
- Cabin heat – OFF
- Generator – OFF
- Master switch – OFF
- Aircraft Evacuation – Carry out immediately

9.4.3. Engine fire in-flight

- Cabin heating – OFF
- Fuel selector valve – OFF
- Fuel pump – OFF
- Throttle – FULL power
- Ignition key – OFF
- Cabin vents – OPEN
- Land ASAP applying forced landing procedure

CAUTION!

AFTER AN ENGINE FIRE DO NOT TRY TO RE-START THE ENGINE

9.4.4. Cabin fire / electrical smoke in-flight

- Cabin heating – OFF
- Cabin vents – OPEN
- Canopy – OPEN, if necessary
- Fire extinguisher (if fire is in the cabin) – TO BE USED

If smoke persists:

- Generator – OFF
- Master switch – OFF
- Land ASAP

9.4.5. Cabin fire / electrical smoke on ground

- Generator – OFF
- Throttle – IDLE
- Ignition key – OFF
- Fuel selector valve - OFF
- Master switch – OFF
- Fire extinguisher – TO BE USED
- Aircraft Evacuation – Carry out immediately

9.5. Emergency landing

9.5.1. Forced landing without engine power

- Flaps – Closed
- Airspeed – 69 KIAS
- Throttle – IDLE
- Safety belts – Tighten
- Canopy locks – CHECK LOCKED
- Gliding ratio (no power) – 12,8
- Landing place – IDENTIFY
- Fuel selector valve – OFF
- Fuel pump – OFF
- Ignition key – OFF When certain to land:

- Flaps – As necessary
- Generator – OFF
- Master switch – OFF
- The flare shall be done on top of the vegetation and pull the stick at touch down

9.5.2. Power-on forced landing

- Airspeed – 69 KIAS
- Flaps – CLOSED
- Safety belts – Tighten
- Canopy locks – CHECK LOCKED

When certain to land, right before touch down:

- Flaps – As necessary
- Fuel selector valve – OFF
- Fuel pump – OFF
- Ignition key – OFF
- Generator – OFF
- Master switch – OFF

- The flare shall be done on top of the vegetation and pull the stick at touch down

9.6. Other emergencies

9.6.1. Recovery from unintentional spin

- Throttle – IDLE
- Rudder – Opposite to the spin rotation – APPLY FULL
- Control stick – NEUTRAL As the spin stops:
- Rudder – NEUTRAL
- Control stick – Gentle proceed to level flight
- Throttle – Set for level flight

WARNING!

INTENTIONAL SPINNING IS PROHIBITED

9.6.2. Unintentional flight into icing conditions

- Carburetor heating – ON

Immediately fly away from icing conditions (changing altitude and direction of flight, out of clouds, visible moisture, precipitations).

- Controls surfaces - Continue to move to maintain their movability
- Propeller speed – Increase RPM
- Cabin heat – ON

WARNING!

FLYING INTO KNOWN ICING CONDITIONS IS PROHIBITED

10. Unit conversation table

1 knots = 1 NM/h =1,853 km/h

1 lbs (librae = pounds) = 0,4536 kg

1 qts (US quart) = 0,946 l

1 gal (US gallon) = 3,78 l

1 in (inch) = 2,54 cm

1 psi (pounds per square inch) = 6894,76 Pa = 6,89476 kPa = 0,0689476 bar

1 inHg (Hg inch) = 25,4 mmHg = 3386,39 Pa n F°

= ((n-32)*5) / 9C°

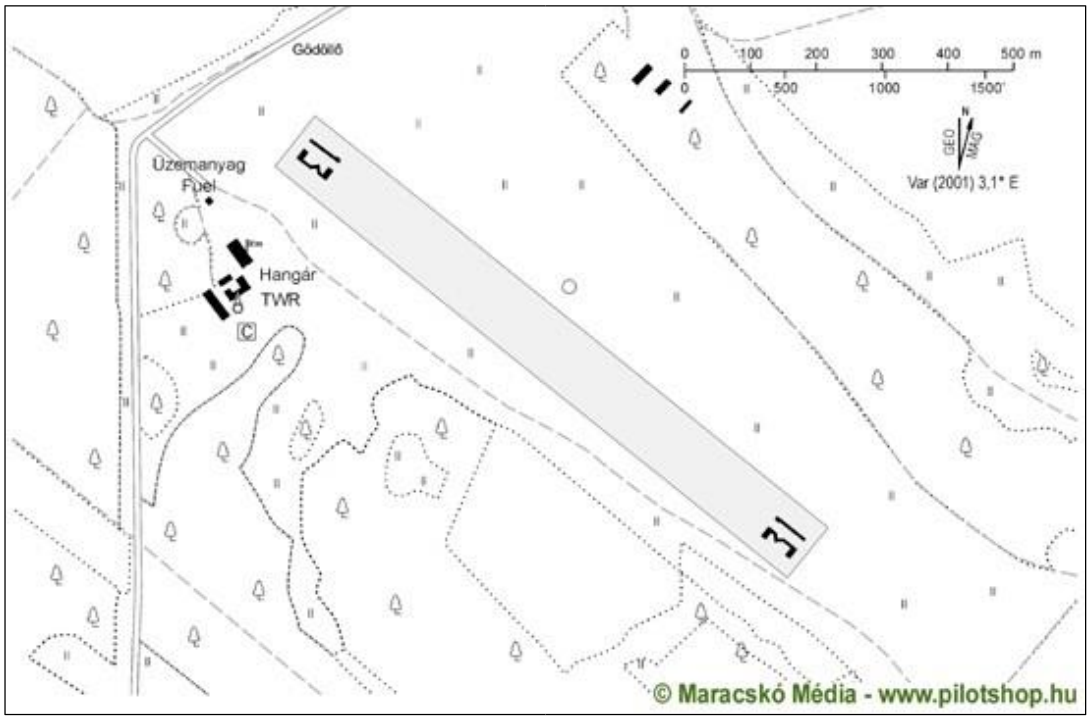
11.1. LHGD (Gödöllő) A/P data

ICAO code:	LHGD
Name:	Gödöllő
Location:	2 km / 1NM SSW Gödöllő
Position:	N473425 E0191957
Elevation:	218 m / 715 ft
Frequency:	119,060 MHz
Runways 31/13	(Centerline 306/126 degrees Magnetic)
Traffic circuit:	31LH/RH; 13RH/LH; 1000 ft AAL
Airfield category:	Non public aerodrome
Operation:	SR-SS
NVFR:	N/A
IFR:	N/A

11.2. VFR map


Vácegres
ALSÓGÖD
Csomád
Háromház
LH-G21
5000' (1500 m) AMSL PCR
2500' (750 m) AMSL
GND
Iklad
ASZÓD
Domony
VERES-
EGYHÁZ
Szada
Domonyvölgy
LH-G20
3000' (900 m) AMSL PCR
2000' (600 m) AMSL
GND
GÖDÖLLŐ
Bag
Fót
Mogyoród
Budapest TMA6
FL195 (5950 m STD)
2000' (600 m) AMSL
MÁRIABESNYŐ
HBP01
2000' AMSL
Hungaroring
SZÁRÍTÓPUSZTA
GÉPGYÁR
LHGD
Csömör
Kerepes
KEREPES
Ilkamajor
Valkó
Kistarcsa
Isaszeg
Var (2001) 3,1° E
Nagytarcsa
Szentgyörgypuszta
Ferihegy CTR
2000' (600 m) AMSL
GND
"TPS" Tápiósáp
DVOR NDB DME
115.9 MHz 306 kHz 106 X
PÉCEL
Szentkirály
1500' AMSL
HÁRSAS
Jakabszállás
TAPIO
© Maracskó Média - www.pilotshop.hu

11.3. A/P map



11.4. Aerial photo

11.5. A/P limitations

RWY	Size (m)	Surface	TORA (m)	LDA (m)	Load	Lighting
13 / 31	1300 x 60	grass	1300 x 60	950 x 60	15 / 5	N / A

Remarks:

-Displaced tresholds

-TORA, LDA appr. 800 m/2600 ft only

- Only day VFR
- The A/P can be used after permitted by the operator except for urgency or emergency
- Establish contact 4-5 minutes flight time prior reaching the field at Gödöllő INFO (119,060 MHz)
- The A/P directory can be checked at: **www.lhgd.hu** site
- **Warnings:**
- Sheeps on the RWY
- Budapest TMA over the field: max permitted altitude 2000 ft AMSL
- Possible activities: parachuting; winch started paragliding; remote controlled model flying