SECTION 4 – NORMAL PROCEDURES

INDEX

1. INTRODUCTION

Section 4 describes checklists and recommended procedures for the conduct of normal operations for ***P2006T*** aircraft.

1.1. NORMAL OPS GENERAL RECOMMENDATIONS

The following points should be always brought to attention to pilot/instructor/operator when operating a Tecnam aircraft equipped with variable pitch propeller:

1. ***Propeller governor ground check***: during the ground check of governor, as prescribed by the propeller/governor manufacturer, the drop should not be above 150/200 prop RPM. The aim of this ground check is to confirm governor efficiency, not the complete feathering function.
Especially during the first cycle of prop lever pulling, the governor tendency is to respond to the input with consistent delay (causing the pilot to continue retarding the prop lever until a sudden and abrupt RPM change is observed).

This causes an excessive drop in propeller speed which, in some cases, may reach up to 500/800 RPM and, consequently, a drop of up to 2000 engine shaft rpm. The long term result is a major wear of engine gearbox, bushings and pistons and, in some cases, may result in detonation.
In order to avoid these long term adverse effects, ground check of governor should be performed by slowly and gently retarding the prop lever until a drop of not more than 150/200rpm is displayed on prop rpm indicator. The purging cycle should be repeated up to 3 times, with the governor closely (firmly and positively) control the rpm.

- during governor ground check, drop shall not exceed 150/200 propeller rpm
- pilot shall be ready to push the prop lever if drop of >200rpm is recorded during check

2. Power changes: When power setting changes are required in any flight condition, remember the following correct procedure:

- **Power increase = FIRST Prop THEN Map**
- **Power reduction = FIRST Map THEN Prop**

G950 system use

For safety reasons, G950 operational procedures must be learned on the ground.

Document Garmin G950 Pilot's Guide for Tecnam P2006T (P/N 190-01146-XX) – last issue, reports detailed instructions to operate the system in subject. Make always reference to the above mentioned document.

CAUTION

Garmin G950 Pilot's Guide for Tecnam P2006T (P/N 190-01146-XX) – last issue - must be carried onboard the airplane at all times.

WARNING

To reduce the risk of unsafe operation, carefully review and understand all aspects of the G950 Pilot's Guide documentation at the last issue and the AFM for the aircraft. Thoroughly practice basic operation prior to actual use. During flight operations, carefully compare indications from the G950 to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety purposes, always resolve any discrepancies before continuing navigation.

WARNING

Do not use basemap (land and water data) information for primary navigation. Basemap data is intended only to supplement other approved navigation data sources and should be considered as an aid to enhance situational awareness. Do not use outdated database information. Databases used in the G950 system must be updated regularly in order to ensure that the information remains current. Pilots using any outdated database do so entirely at their own risk. Reference "Garmin G950 Pilot's Guide for the Tecnam P2006T" (P/N 190-01146-XX), last issue, Appendix B concerning SD card use and databases.

WARNING

For safety reasons, G950 operational procedures must be learned on the ground.

WARNING

Because of variation in the earth's magnetic field, operating the G950 within the following areas could result in loss of reliable attitude and heading indications.

North of 72° North latitude at all longitudes; South of 70° South latitude at all longitudes; North of 65° North latitude between longitude 75° W and

120° W. (Northern Canada); North of 70° North latitude between longitude 70° W and 128° W. (Northern Canada); North of 70° North latitude between longitude 85° E and 114° E. (Northern Russia); South of 55° South latitude between longitude 120° E and 165° E. (Region south of Australia and New Zealand).

WARNING

The altitude calculated by G950 GPS receivers is geometric height above Mean Sea Level and could vary significantly from the altitude displayed by pressure altimeters, such as the GDC 74A Air Data Computer, or other altimeters in aircraft. GPS altitude should never be used for vertical navigation. Always use pressure altitude displayed by the G950 PFD or other pressure altimeters in aircraft.

NOTE

If the pilot profile is changed during the flight, the HSI could not indicate the correct LOC or VOR indication until the pilot manually tunes the active frequency. Make sure that the displayed indication on the HSI indicator is consistent with the selected frequency.

NOTE

The data contained in the terrain and obstacle databases comes from government agencies. Garmin accurately processes and cross-validates the data, but cannot guarantee the accuracy and completeness of the data. Reference "Garmin G950 Pilot's Guide for the Tecnam P2006T" (P/N 190-01146-XX), last issue, Appendix B concerning SD card use and databases.

NOTE

Use of polarized eyewear may cause the flight displays to appear dim or blank.

2. AIRSPEEDS

2.1. NORMAL OPERATIONS

The following airspeeds are those which are significant for normal operations, with reference to both MTOW: 1180 kg and 1230 kg (if Supplement G10 - Increased MTOW @1230 KG - is applicable).

		MTOW	
	FLAPS	**1180kg**	**1230 kg**
Rotation Speed (in takeoff, V_R)	T/O	**64 KIAS**	**65 KIAS**
Best Angle-of-Climb Speed (V_X)	0°	**73 KIAS**	**72 KIAS**
Best Rate-of-Climb speed (V_Y)	0°	**80 KIAS**	**84 KIAS**
Approach speed	T/O	**90 KIAS**	**90 KIAS**
Final Approach Speed	FULL	**70 KIAS**	**71 KIAS**
Manoeuvring speed (V_A)	0°	**118 KIAS**	**122 KIAS**
Never Exceed Speed (V_{NE})	0°	**167 KIAS**	**171 KIAS**

2.2. SINGLE ENGINE TRAINING

V_{SSE} is a speed selected as training aid for pilots in the handling of multi-engine aircraft. It is the minimum speed for intentionally rendering on engine inoperative in flight. This minimum speed provides the margin the manufacturer recommends for us when intentionally performing engine inoperative maneuvers during training. Shutting down an engine for training shall not become a habit; for safety purpose, and in order to optimise training, engine shutdown to perform OEI shall be executed only when necessary and required by regulations (e.g. during flight check, skill tests or demonstration as per 14CFR Part61 or similar).

A simulated feather condition is obtained with propeller lever full forward and throttle lever set at 13.5 in Hg MAP at 70-90 KIAS and 2000-4000 ft (density altitude).

Recommended safe simulated OEI speed (V_{SSE})	**70 KIAS**

NOTE *Keep speed above V_{SSE} for simulated OEI training operations.*

In normal operations, shutting down an engine for training shall not become a habit, in particular for safety reasons and in order to optimise training; engine shutdown to perform OEI shall be executed only when required by regulations (e.g. during flight check, skill tests or demonstration as per 14CFR Part61 or equivalent rule).

The continuous operation of engine securing for training may indeed cause long term damages to the engine itself due to the high load coming from propeller (which is in feathering angle during the engine re-starting).

3. NORMAL PROCEDURES CHECKLIST

3.1 RECOMMENDATIONS FOR COLD WEATHER OPERATIONS

Engine cold weather operation

Refer to Rotax 912 Series Operators Manual, last issue, providing instructions for operating media (lubricant and coolant specifications) to be used in cold weather operation.

Parking

When the airplane is parked in cold weather conditions and it is expected to be soaked at temperatures below freezing, some precautions need to be taken.

Clear snow, slush, and ice in the parking area, or at least clear the area around the tires to prevent them from freezing to the ground. Apply plugs on Pitot and static ports.

The exposed airframe parts should be protected, especially the engines, the wheels, the blades and the gears against the snow or ice accumulation. Water and other freezable liquids should be removed from the airplane.

Standing water that could freeze should be removed from critical parts, as flaps and ailerons hinges, trim tabs hinges, drain points, LG doors, cabin doors etc.

With an ambient temperature of below -20°C, remove battery and store in a warm dry place; additionally in order to prevent a heavy discharge and to increase the battery life time, it is recommended to use an external power source for engine starting at temperatures lower than –15°C.

When wheel brakes come in contact with ice, slush, or snow with freezing conditions, the brake disk may freeze: park the aircraft with parking brake control knob in OFF position and ensure the aircraft is properly chocked and moored.

In any case, when the probability of ice, snow, or heavy frost is forecast, the use of a hangar is strongly recommended.

An external inspection of the aircraft is performed before each flight, as prescribed on Section 3.1.

For cold weather operations, the crew must focus on the check of following parts of airplane (free of snow/ice/standing water).

- control surfaces
- fuselage
- wings
- vertical and horizontal stabilator
- stall warning switch
- engine inlets
- engines draining points
- propeller blades
- LG doors
- Pitot, and static ports
- fuel tank vents

Tires show low pressure in cold weather: the required adjustments to inflation pressure should be performed on tires cooled to ambient temperature.

If the crew detects ice, anti icing products are not allowed. To remove ice, tow the aircraft in the hangar and operate with a soft brush or a humid cloth.

WARNING

Removal of snow/ice accumulations is necessary prior to take-off because they will seriously affect airplane performance. Aircraft with ice/snow accumulation is not cleared for flight.

If the aircraft must be operated in cold weather conditions within the range -25ºC to -5ºC**,** it is suggested to perform following procedure in order to speed up the engine warm-up:

- Tow the airplane in a warm hangar (warmer than -5°C);
- Let airplane temperature stabilize;
- Check pressure in hydraulic system, recharge if necessary;
- Heat the cabin to a suitable value to avoid windshield frost in flight; an electrical fan heater may be used inside the cabin;
- Tow airplane outside and perform engine starting as soon as possible.

3.2 PRE-FLIGHT CHECK – AIRCRAFT WALK-AROUND

To perform the aircraft walk-around, carry out the checklists according to the pattern shown in Figure 4-1.

WARNING

If ignition switches are turned ON, a propeller movement can cause the engine starting with consequent hazard for people nearby.

NOTE

Visual inspection is defined as follows: check for defects, cracks, de-lamination, excessive play, unsafe or improper installation as well as for general condition, presence of foreign objects, slippage markers etc. For control surfaces, visual inspection also involves additional check for freedom of movement. Always check the ground in the area of the aircraft for evidence of fuel, oil or operating fluids leakages.

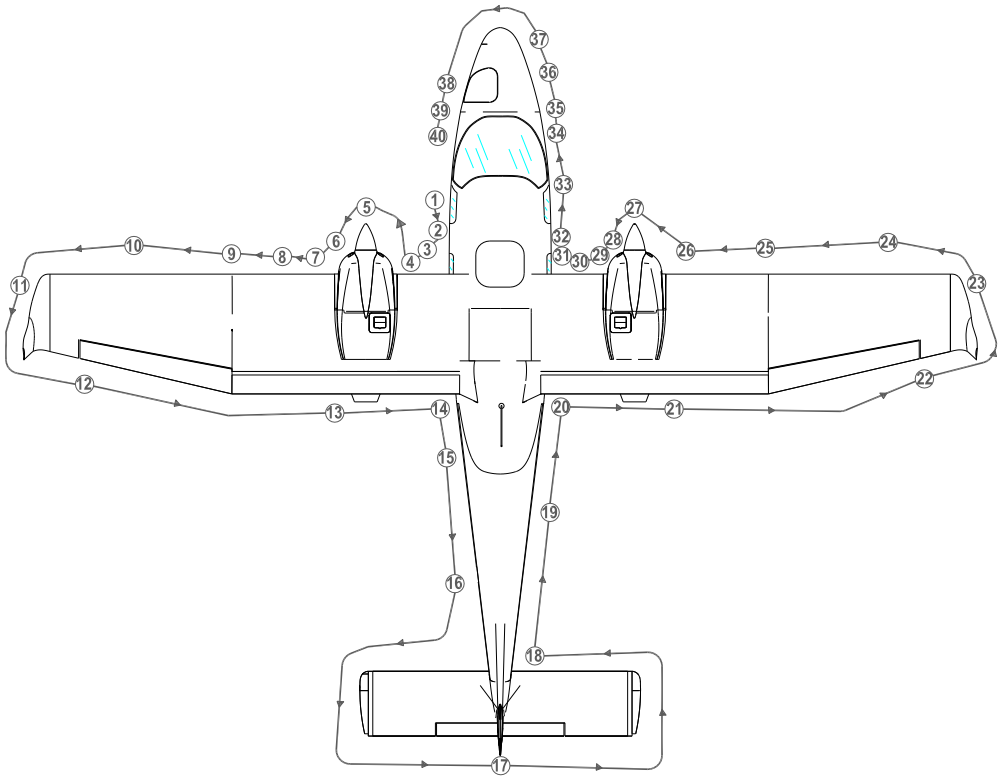


Figure 4.1

1	Pilot door and cabin	*Check door for integrity. Turn ON the Master Switch and check Stall Warning switch for operation and condition; check lighting of Landing/Taxi/Nav/Strobe lights, then turn OFF the Master Switch.*
2	Left main landing gear	*Check fuselage skin status, tire status (cuts, bruises, cracks and excessive wear), slippage markers integrity, gear structure and shock absorber, hoses, gear door attachments and gear micro-switches. There should be no sign of hydraulic fluid leakage.*
3	Wheel chock	*Remove if employed*
4	Propeller and spinner	*The propeller blades and spinner should be free of cracks, nicks, dents and other defects and should rotate freely. Check fixing and lack of play between blades and hub.*
5	*Left engine nacelle*	*Perform following inspections:* *a) Check the surface conditions.* *b) Nacelle inlets and exhausts openings must be free of obstructions. If inlet and outlet plugs are installed, they should be removed.* *c) Check radiators. There should be no indication of leakage of fluid and they have to be free of obstructions.* *d) <u>Only before the first flight of a day</u>:* *(1) Verify coolant level in the expansion tank, replenish as required up to top (level must be at least 2/3 of the expansion tank).* *(2) Verify coolant level in the overflow bottle through the slot under the nacelle: level must be between min. and max. mark. Replenish if required removing the upper cowling; after that, install upper cowling checking for interferences with radiators* *(3) Turn the propeller by hand to and fro, 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.

e) Check oil level and replenish as required. Prior to oil check, switch off both ignitions circuits and 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.

f) Drain off Gascolator for water and sediment (drain until no water comes off). Then make sure drain valve is closed.

g) Check drainage hoses clamps

h) Verify all parts are fixed or locked.

i) Verify all inspection doors are closed.

6	Air induction system	*Check engine air inlet for integrity and correct fixing. The air intake filter must be free of obstructions.*
7	Left fuel tank	*Check that the refuelling port cap is properly secured, then perform the fuel tank sump drainage operating the related valve which, after operation, must be checked closed. Fuel must checked for water and sediment. Verify the tank vent outlet is clear.*
8	Landing and taxi lights	*Visual inspection*
9	Left wing leading edge	*Visual inspection. Check cabin ventilation inlet and carburettor heating inlet for condition and free of obstruction. Check stall strip.*

10	Left wing top and bottom panels	*Visual inspection*
11	Left winglet, nav and strobe lights, static discharge wick	*Check for integrity and fixing*
12	Left aileron and balance mass	*Visual inspection, remove tie-down devices and control locks if employed.*
13	Left Flap and hinges	*Visual inspection*
14	Left static port	*Remove protective cap – Visual inspection*
15	Antennas	*Check for integrity*
16	Gear pump, external power and battery compartment	*Check emergency landing gear extension system pressure (low pressure limit: 20 bar), external power and battery compartments closure.*
17	Horizontal and vertical empennage and tabs. Static discharge wicks.	*Check the actuating mechanism of control surfaces and the connection with related tabs. Check wicks for integrity. Remove tie-down device if employed.*
18	Stabilator leading edge	*Check for integrity*
19	Fuselage top and bottom skin	*Visual inspection*
20	Right static port	*Remove protective cap – Visual inspection*
21	Right Flap and hinges	*Visual inspection*
22	Right aileron and balance weight	*Visual inspection, remove tie-down devices and control locks if employed.*
23	Right winglet, nav and strobe lights, static discharge wick	*Check for integrity and fixing and lighting*
24	Right wing top and bottom panels	*Visual inspection*
25	Right wing leading edge	*Visual inspection. Check cabin ventilation inlet and carburettor heating inlet for condition and free of obstruction. Check stall strip.*
26	Right fuel tank	*Check that the refuelling port cap is properly secured, then perform the fuel tank sump drainage operating the related valve which, after operation, must be checked closed. Fuel must checked for water and sediment. Verify the tank vent outlet is clear.*
27	Propeller and spinner:	*The propeller blades and spinner should be free of cracks, nicks, dents and other*

		defects and should rotate freely. Check fixing and lack of play between blades and hub.
28	Right engine nacelle	*Apply check procedure reported in the walk-around station 5 and 6*
29	Passenger door and cabin	*Check door for integrity. Check safety belts for integrity and baggage for correct positioning and fastening. Check ditching emergency exit safety lock. Check passengers ventilation ports for proper setting.*
30	Right main landing gear	*Apply check procedure reported in the walk-around Station 2*
31	Wheel chock	*Remove if employed*
32	Bottom fuselage antennas	*Check for integrity*
33	Right cabin ram-air inlet	*Visual inspection*
34	Right Pitot tube	*Remove protective cap and check for any obstruction*
35	Nose landing gear	*Check tire status (cuts, bruises, cracks and excessive wear),slippage markers integrity, gear structure and retraction mechanism, shock absorber and gear doors attachments. There should be no sign of hydraulic fluid leakage.*
36	Radome	*Check for integrity*
37	Radome access door	*Visual inspection*
38	Left Pitot tube	*Remove protective cap and check for any obstruction*
39	Left cabin ram-air inlet	*Visual inspection*

NOTE *Avoid blowing inside Pitot-tube and inside airspeed indicator system's static ports as this may damage instruments.*

3.3 COCKPIT INSPECTIONS

CAUTION

Instruct passengers on how to use safety belts and normal / emergency exits. Passenger embarkation should be done, avoiding contact with hot / oily parts such as engine exhaust pipes, drainage tubes and wheel brakes, or sharp wing control surfaces edges. Do not smoke on board.

CAUTION

Clean the displays using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings. Cleaners containing ammonia will harm the anti-reflective coating.

1.	Parking brake	*CHECK ENGAGED*
2.	AFM and Garmin Pilot's Guide	*CHECK on board*
3.	Weight and balance	*CHECK if within the limits*
4.	Flight controls	*Remove seat belt used as lock*
5.	PFD and MFD	*CHECK clean*
6.	Seat	*Adjust as required*
7.	Seat belt	*Fastened*
8.	Passenger briefing	*Completed*
9.	Doors	*CLOSED AND LOCKED*
10.	Landing gear control lever	*CHECK DOWN*
11.	Breakers	*All IN*
12.	MASTER SWITCH	*ON*
13.	Fuel quantity	*CHECK*
14.	RH fuel selector	*RIGHT*
15.	LH fuel selector	*LEFT*
16.	RH Electrical Fuel Pump	*ON, check fuel pressure gauge correct operation.*
17.	RH Electrical Fuel pump	*OFF, check pressure decreased at zero*
18.	LH Electrical Fuel Pump	*ON, check fuel pressure gauge correct operation.*
19.	LH Electrical Fuel pump	*OFF, check pressure decreased at zero*
20.	Strobe light	*ON*
21.	Landing gear lights	*TEST*
22.	ELT	*CHECK set to ARM*
23.	Fire detector	*TEST*
24.	Engine levers friction	*Adjust if required*
25.	Flight controls	*CHECK free*
26.	Alternate static port	*CHECK closed*

27.	Cabin heat	*CLOSED*
28.	Flaps	*Operate control to FULL position. Verify extension. Retract flaps.*
29.	Pitch trim control	*Set to neutral position.*
30.	Rudder trim control	*Set to neutral position.*
31.	Eng. Starting Battery Voltmeter (if installed)	*Check 12 to 14 Volt*

3.4 ENGINE STARTING

CAUTION

Avionics switches must be set OFF during engine starting to prevent avionic equipment damage.

1	Start clearance	*Obtain if needed*

Right engine starting

2	RH Throttle lever	*IDLE*
3	RH Carburetor heat	*OFF*
4	RH Propeller Lever	*FULL FORWARD*
5	RH Choke	*ON if required*

NOTE

Cold engine.
Throttles idle (fully closed), chokes fully opened.
Soon after starting advance the throttle to ~800 RPM and slowly close the choke. Keep engine at ~900 RPM for warm up period.

Hot engine.
Park the aircraft with the nose pointing into wind in order to aid cooling.
Keep chokes closed and slowly open the throttles one inch while cranking.

"Flooded Engine" (after engine start failure).
Keep chokes closed, open throttle fully and start the engine, then quickly reduce throttles to idle

6	RH Electrical Fuel pump	*ON, check advisory light ON and positive fuel press build up*
7	RH engine propeller zone	*CHECK free*
8	RH ignitions switches	*BOTH ON*

WARNING

Ensure that the area around engine propeller disc is clear from people and obstacles. Call out for propeller free.

9	RH start pushbutton	*PUSH*
10	RH Field	*ON*
11	RH engine oil gauge	*CHECK if increasing within 10 sec. (max 7 bar in cold operation)*
12	RH propeller RPM	*1200 RPM*

13	RH Choke	*OFF*
14	RH Avionics	*ON*
15	RH Cross bus	*ON*
16	RH Ammeter	*CHECK Amps positive*
17	Voltmeter	*CHECK 12 to 14 Volt*
18	Chronometer	*Start*
19	Strobe light	*ON*

Left engine starting

1	LH Throttle lever	*IDLE*
2	LH Carburetor heat	*OFF*
3	LH Propeller Lever	*FULL FORWARD*
4	LH Choke	*ON if required*
5	LH Electrical Fuel pump	*ON, check advisory light ON and positive fuel press build up*
6	LH engine propeller zone	*CHECK free*
7	LH ignitions switches	*BOTH ON*

WARNING

Ensure that the area around engine propeller disc is clear from people and obstacles. Call out for propeller free.

8	LH start pushbutton	*PUSH*
9	LH Field	*ON*
10	LH engine oil gauge	*CHECK if increasing within 10 sec. (max 7 bar in cold operation)*
11	LH propeller RPM	*1200 RPM*
12	LH Choke	*OFF*
13	LH Avionics	*ON*
14	LH Cross bus	*ON*
15	LH Ammeter	*CHECK Amps positive*

3.5 BEFORE TAXIING

1	Let the engines warm up to a minimum oil temperature of 50°C at 1200 RPM	
2	Nav , Taxi and Landing lights	*ON*
3	Transponder	*Stand-by*
4	Passengers and crews seat belts	*Fastened*
5	Passengers and crews headphones	*Set as required*

3.6 TAXIING

NOTE *Ensure that the main and passengers' doors warning lights are turned off.*

1	LH/RH Fuel Selector	*As required*
2	LH and RH fuel pressure	*Monitor*
3	Parking Brake	*RELEASE*
4	Flight instruments	*CHECK*
5	Engine instruments	*CHECK*
6	Altimeter	*SET both and crosscheck max difference 150 ft*
7	Brakes	*TEST*

3.7 PRIOR TO TAKEOFF

1	Parking Brake	*ENGAGED*
2	RH Fuel Selector	*RIGHT*
3	LH Fuel Selector	*LEFT*
4	LH and RH fuel pressure	*CHECK*
5	LH and RH Engine parameters checks:	

- Oil temperature: *50-110 °*
- CHT: *Max 135°*
- Oil pressure: *2-5 bar (above 1400 RPM): 0.8 bar (below 1400 RPM)*
- Fuel pressure: *2.2 – 5.8 psi (0.15 - 0.40 bar)*

  **2.2 – 7.26 psi (0.15 – 0.50 bar)*

**applicable for fuel pump part no.893110 and no.893114*

6	LH and RH Generator lights	*CHECK BOTH OFF*
7	LH and RH Propeller Lever	*FULL FORWARD*
8	LH and RH Throttle Lever	*1650 RPM*
	RH Ignitions switches	Set L / R / BOTH *(RPM drop with single ignition circuit selected must not exceed 130 prop's RPM; maximum RPM difference by use of either circuits LEFT or RIGHT cannot overcome 50 RPM)*
9	RH Propeller Lever	*Governor check. Retard the prop lever until a RPM drop is observed. The purging cycle should be repeated up to 4 times, with the governor closely (firmly and positively) control the rpm. Verify 1650 prop RPM are restored with prop lever at full forward position.*
10	RH Carburettor heat	*ON, verify propeller RPM decreasing about 100 RPM*
11	RH Carburettor heat	*OFF*
12	RH engine instruments	*CHECK parameters if within green arcs*
13	LH Ignitions switches	Set L / R / BOTH *(RPM drop with single ignition circuit selected must not exceed 130 prop's RPM; maximum RPM difference by use of either circuits LEFT or RIGHT cannot overcome 50 RPM)*

14	LH Propeller Lever	*Governor check. Retard the prop lever until a RPM drop is observed. The purging cycle should be repeated up to 4 times, with the governor closely (firmly and positively) control the rpm. Verify 1650 prop RPM are restored with prop lever at full forward position.*
15	LH Carburettor heat	*ON, verify propeller RPM decreasing about 100 RPM*
16	LH Carburettor heat	*OFF*
17	LH engine instruments	*CHECK parameters if within green arcs*
18	LH and RH Fuel quantity indicator	*CHECK consistent with fuel plan*
19	Flaps	*T/O or as required (see Section 5, Take OFF performances)*
20	Pitch trim and rudder trim	*SET neutral position*
21	Flight controls	*Check free*
22	Seat belts fastened and doors closed and locked	*CHECK*

3.8 LINE-UP

1	Parking Brake	*RELEASE, check full in*
2	Annunciator window	*CHECK cautions and warnings OFF*
3	RH Fuel Selector	*RIGHT*
4	LH Fuel Selector	*LEFT*
5	Pitot heat	*as required*
6	XPDR	*SET ALT*
7	Magnetic compass	*CHECK*
8	AHRS	*CROSS CHECK*

3.9 TAKEOFF AND CLIMB

1	Landing light	*ON*
2	LH and RH Electrical Fuel pump	*BOTH ON*
3	Carburettors heat	*CHECK OFF*
4	LH and RH Propeller Lever	*FULL FORWARD*
5	LH and RH Throttle Lever	*FULL POWER*
6	Engines instruments	*Parameters within green arcs*
7	Rotation speed	

MTOW 1180kg	**MTOW 1230 kg**
Vr = 64 KIAS	*Vr = 65 KIAS*

8	Apply brakes to stop wheel spinning	
9	Landing gear control knob	*UP: check green lights and TRANS light turned OFF within about 20"*
10	Landing and taxi lights	*OFF above 10000 ft*
11	LH and RH Propeller Lever	*Set max cont power at* safe altitude

CAUTION

Max take off power must be limited to 5 minutes. Reduce Throttles MAP power before retracting Propeller to 2200 RPM or below.

12	LH and RH Electrical Fuel pump	*BOTH OFF*

NOTE

It is recommended to retract landing gear when a positive climb rate is ensured at the applicable best speed (V_Y or V_X as necessary).
It has been demonstrated that best climb rate is always obtained with flaps in UP position: refer to Section 5, "Take off rate of climb" and "Enroute rate of climb" tables.
Noteworthily best climb gradient speed (V_X)flaps UP is lower than best climb speed (V_X)flaps T/O up to 6000 ft (density altitude).Refer to Section 5, "Best climb gradient speed" table.

3.10 CRUISE

1 LH and RH Propeller Lever *SET to 1900-2250 RPM*

CAUTION *Throttles MAP decrease should be made before propeller speed reduction below 2200 RPM, as, contrariwise, Propeller Lever increase RPM should be set before engine Throttle Levers are advanced.*

2 Engine parameters check (LH and RH)

- Oil temperature: *90°÷110 ° C.*
- CHT: *90° ÷ 110 °C*
- Oil pressure: *2 - 5 bar.*
- Fuel pressure: *2.2 – 5.8 psi*

  **2.2 – 7.26 psi (0.15 – 0.50 bar)*

**applicable for fuel pump part no.893110 and no.893114*

3 Carburettor heat as needed *(see also instructions addressed on Section 3, Para. 7.4)*

WARNING *Deselect and do not use Auto Pilot if possible icing condition area is inadvertently entered.*

4 Fuel balance and crossfeed *check as necessary*

3.11 TURBULENT AIR OPERATION

In keeping with good operating practice used in all aircraft, it is recommended that when turbulent air is encountered or expected, the airspeed be reduced to maneuvering speed to reduce the structural loads caused by gusts and to allow for inadvertent speed build-ups, which may occur as a result of the turbulence or of distractions caused by the conditions.

3.12 DESCENT AND APPROACH

1	Propellers	*Set to Max Continuous 2250 RPM*
2	Carburettors heat	*As required*
3	Altimeter setting	*QNH set and crosscheck*

3.13 BEFORE LANDING

1	Rear passengers seats	*Seats set at full aft and lower position*
2	LH and RH Electrical Fuel pump	*BOTH ON*
3	On downwind leg:	

MTOW 1180kg	MTOW 1230 kg
V_{FE}= 119KIAS	V_{FE}=122KIAS

Flaps T/O

4	Speed below applicable VLO/VLE	*Landing gear control knob - DOWN – Check green lights ON*
5	Carburettors heat	*CHECK OFF*
6	LH and RH Propeller Lever	*FULL FORWARD*
7	On final leg: speed below 93 KIAS	*Flaps FULL*
8	Final Approach Speed	

MTOW 1180kg	MTOW 1230 kg
V_{APP}= 70KIAS	V_{APP}=71KIAS

9	Landing and taxi light	*ON*
10	Touchdown speed	*65 KIAS*

3.14 BALKED LANDING/MISSED APPROACH

1	LH and RH Propeller Lever	*FULL FORWARD*
2	LH and RH Throttle Lever	*FULL POWER*

CAUTION

Propeller Lever increase to max RPM should be attained before engine Throttle Levers are advanced to max take off power. Max take off power must be limited to 5 minutes.

3	Flaps	*T/O*
4	Speed	*Keep over 62 KIAS, climb to V_Y or V_X as applicable*
5	Landing gear	*UP as positive climb is achieved*
6	Flaps	*UP*

NOTE

It is recommended to retract landing gear when a positive climb rate is ensured at the applicable best speed (V_Y or V_X as necessary).
It has been demonstrated that best climb rate is always obtained with flaps in UP position: refer to Section 5, "Take off rate of climb" and "Enroute rate of climb" tables.
Noteworthily best climb gradient speed (V_X)flaps UP is lower than best climb speed (V_X)flaps T/O up to 6000 ft (density altitude).Refer to Section 5, "Best climb gradient speed" table.

3.15 AFTER LANDING

1	LH and RH Electrical Fuel pump	*BOTH OFF*
2	Flaps	*0°*
3	Landing light	*OFF*

3.16 PARKING/SHUT DOWN

NOTE

It is always suggested to park the aircraft with the nose pointing into wind to improve cooling after shut down.

1	Parking brake	*Engage*
2	Taxi light	*OFF*
3	Engines	*Allow for cooling down 1 minute at idle power*
4	LH and RH AVIONIC BUS	*OFF*
5	LH and RH CROSS BUS	*OFF*
6	Flaps	*Check in UP*
7	Trims	*Check neutrals*
8	Navigation lights	*OFF*

NOTE

Ensure the engine is at its lowest possible idle speed before selecting ignitions off.

9	Ignitions	*Turn OFF one at time*
10	Doors safety locks	*Check OFF*
11	LH/RH Field	*OFF*
12	All external lights	*OFF*
13	Master Switch	*OFF*
14	LH and RH Fuel Selector	*BOTH OFF*
15	Emg Batt / Emg cockpit light	*Check OFF*

WARNING

Before disembarkation verify propellers are fully stopped.

CAUTION

Instruct passengers to fully open pax door (against nacelle stop) and depart alongside aircraft fuselage, avoiding contact with hot / oily parts such as engine exhaust pipes, drainage tubes and wheel brakes, or sharp wing control surfaces edges.

CAUTION

Crew should avoid propeller disc area crossing while proceeding alongside a fully opened pilot's door (up to 110°).

3.17 POSTFLIGHT CHECKS

1	Protective cover for Pitot tubes, stall warning and static port plugs.	*Install*
2	Lock one control wheel with safety belt.	
3	Wheel chocks	*Place under MLG*
4	Aileron lock	*Place and tighten*
5	Pilot and passengers doors.	*Close and latch*

4. GROUND TOWING, PARKING AND MOORING

4.1. TOWING

CAUTION

When the a/c is moved on the ground, the Master Switch must be turned ON until the a/c is parked.

To tow the aircraft it is necessary to use a metal stiff bar connected to the nose gear.

WARNING

Do not turn nose wheel above 20° either side of center: greater steering angles can damage the wheel stop. The tow bar must be removed before engines starting.

4.2. PARKING

General

Under normal weather conditions, the airplane may be parked and headed in a direction that will facilitate servicing without regard to prevailing winds. Ensure that it is sufficiently protected against adverse weather conditions and present no danger to other aircraft.

Procedure

1. Position airplane on levelled surface, headed into the prevailing wind, if practical.
2. Engage parking brake and install control locks
3. Secure pilot control wheel by wrapping the seat belt around it.

NOTE:

Do not engage the parking brakes at low ambient temperature; accumulation of moisture may cause the brakes to freeze. In this case use wheel chocks.

In case of long time parking or overnight parking, it is recommended to moor the a/c as shown on Para. 4.3.

CAUTION

Mooring is strongly recommended when the wind is more than 15 knots and the a/c is completely refuelled.

4.3. MOORING

The aircraft is moored to insure its immovability, protection, and security under various weather conditions.

CAUTION

Mooring is strongly recommended when the wind is more than 15 knots and the a/c is completely refuelled.

Procedure

1. Position airplane on levelled surface and headed into the prevailing wind.
2. Center nose wheel, engage parking brake and/or use the wheel chocks.

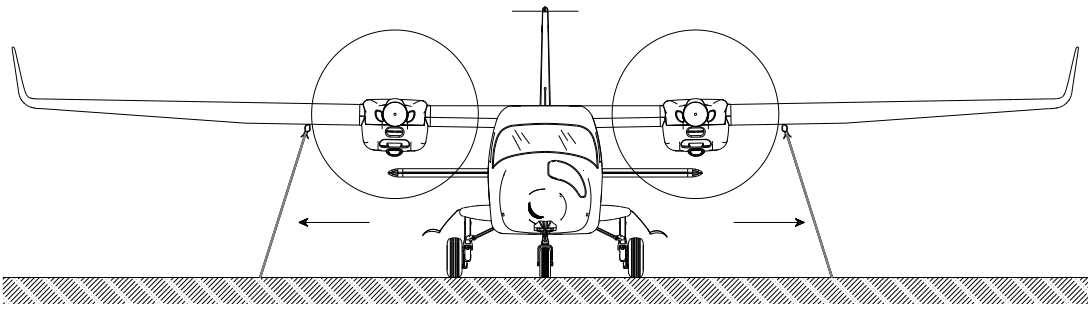
NOTE:

Do not engage the parking brakes at low ambient temperature; accumulation of moisture may cause the brakes to freeze. In this case use wheel chocks.

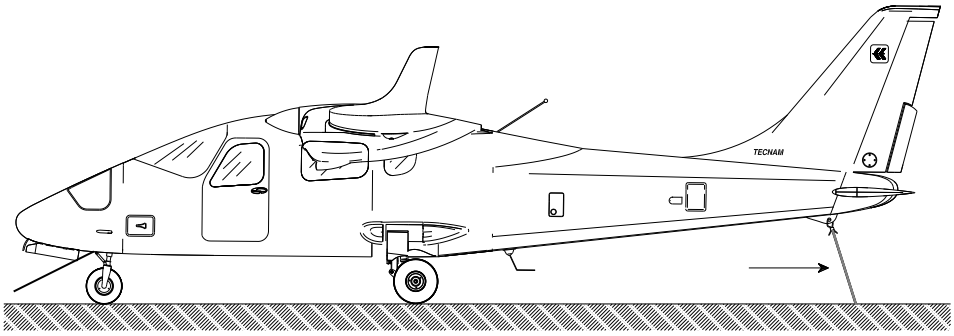
3. Secure pilot control wheel by wrapping the seat belt around it
4. Assure flaps are retracted
5. Electrically ground airplane, by connecting ground cable to the engine muffle
6. Install control locks and protective plugs.
7. Close and lock cabin doors.
8. Secure tie-down cables to the nose gear leg (in correspondence of the wheel fork) and to the wings and tail cone tie-down rings at approximately 45 degree with respect to the ground. (Refer to following figures)

NOTE:

Additional preparation for high winds includes tie-down ropes from the main landing gear forks employment.



Mooring – front view



Mooring – side view