6.6 ONE ENGINE INOPERATIVE LANDING

WARNING

Thoroughly evaluate residual Single Engine Go-Around capabilities and expected climb gradient should a Missed Approach / balked landing be executed.

Refer to Section 5, Para. Single engine go around/Balked landing/climb and Para. 13 and 14- One-engine Rate of Climb at V_{YSE} and V_{XSE}

WARNING

Autopilot must be kept OFF

1.	Seat belts	*Tightly fastened*
2.	Landing lights	*As required*
3.	Operating engine Fuel Selector	*Check correct feeding/crossfeed if needed*
4.	Inoperative engine Propeller Lever	*CHECK FEATHER*
5.	Inoperative engine	*CHECK SECURED*
6.	Operative engine Electrical fuel pump	*ON*

When on final leg:

7.	Flap	*T/O*
8.	Landing gear	*Select DOWN and check three green lights on*
9.	Approach Airspeed	*V_{YSE}*
10.	Touchdown speed	*70 KIAS*

7 LANDING GEAR SYSTEM FAILURES

7.1 EMERGENCY LANDING GEAR EXTENSION

NOTE

Landing gear extension failure is identified by means of the green lights not illuminated: relevant gear leg may not be fully extended and/or locked.

Light bulb operating status can be verified by pressing the LDG push-to-test button. Additionally, the red light TRANS indicates that one or more legs are moving and the PUMP ON amber light on the annunciator panel indicates the hydraulic gear pump is operating.

1. Airspeed — *below* applicable VLO/VLE
2. Landing gear control lever — *DOWN*
3. Emergency gear extension access door — *REMOVE*
4. RH control lever — *ROTATE 90° counterclockwise*
5. Wait at least 20 seconds

NOTE

Main Landing Gear legs green lights may be turned on, thus indicating effective main gear legs blocked in down position by mere effect of gravity force.

6. LH control lever — *ROTATE 180° counterclockwise*
7. **Land as soon as practical**

NOTE

The emergency landing gear extension operation takes about 20- sec.

7.2 COMPLETE GEAR UP OR NOSE GEAR UP LANDING


CAUTION

The following procedure applies if Nose Landing Gear is not extended and locked even after emergency extension procedure.


WARNING

A Nose Landing Gear up leg not down and locked might lead to a hazardous situation, especially on uneven runways.


WARNING

If landing gear position is not known, perform a tower fly-by at safe speed and altitude to have confirmation about its situation.

If possible coordinate fire brigade intervention along runway and report number of persons on board and remaining fuel type and quantity.

If a complete Landing Gear up or a Nose Landing Gear up position is reported:

Preparation

1.	Reduce fuel load if time and conditions permit	
2.	Crew and passengers safety belts	*Tightly fastened*
3.	Landing gear control lever	*UP*
4.	Green lights and TRANS light	*CHECK OFF*
5.	Flap setting	*plan approach with Flap Land*

Before ground contact:

6.	LH and RH Fuel Selector	*BOTH OFF*
7.	LH and RH Electrical fuel pump	*BOTH OFF*
8.	Ignitions	*ALL OFF*

On touch down:

9.	Landing attitude	*slight nose-up and wings levelled,*
10.	Touchdown speed	*as low as 50 KIAS with flap*
11.	Aircraft nose	*gently lower as speed bleeds off*

After aircraft stops:

12.	FIELD LH and RH	*BOTH OFF*
13.	MASTER SWITCH	*OFF*


CAUTION

Master switch to OFF impairs radio communication and outside aircraft lighting.

14. Aircraft Evacuation *carry out if necessary*

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

7.3 PARTIAL MAIN LG EXTENSION


CAUTION

The following procedure applies if one or both Main Landing Gear legs are not completely extended and locked even after emergency extension procedure.


WARNING

A partial gear landing (RH and/or LH leg not down and locked) might turn into a hazardous situation, especially on uneven runways.

If possible try to obtain a symmetric gear extension (e.g. by trying further landing gear retraction) in order to avoid swerving after touchdown. A gear up landing is generally considered safer.


WARNING

If landing gear position is not known, perform a tower fly-by at safe speed and altitude to have confirmation about its situation.

If possible coordinate fire brigade intervention along runway and report number of persons on board and remaining fuel type and quantity.

Preparation

1.	Reduce fuel load if time and conditions permit	
2.	Crew and passengers safety belts	*Tightly fastened*
3.	Landing gear control lever	*UP*
4.	Green lights and TRANS light	*CHECK OFF*
5.	Flap setting	*plan approach with Flap Land*

If partially extended landing gear is confirmed:

Before ground contact:

6.	LH and RH Fuel Selector	*BOTH OFF*
7.	LH and RH Electrical fuel pump	*BOTH OFF*
8.	Ignitions	*ALL OFF*

On touch down:

9.	Align for approach	*on the runway centreline*
10.	Touchdown speed	*as low as 50 KIAS*
11.	Touchdown	*on the extended gear only*
12.	Heading and direction	*maintain applying appropriate aileron and rudder/steering control*
13.	Retracted leg	*keep off the ground as long as possible*

After aircraft stops:

14. FIELD LH and RH — *BOTH OFF*
15. MASTER SWITCH — *OFF*

CAUTION

Master switch to OFF impairs radio communication and outside aircraft lighting.

16. Aircraft Evacuation — *carry out if necessary*

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

7.4 FAILED RETRACTION

1.	Airspeed	*Keep below applicable VLO/VLE*
2.	Landing gear control lever	*DOWN*

WARNING

A Landing Gear lever recycle (further retraction attempt) may result in a final partial Landing Gear Extension, which may then compromise safe landing aircraft capability.

3.	Landing Gear lights	*Check*

If a safe landing configuration is obtained (3 greens)

4. Land normally

If a safe landing gear configuration is not obtained:

4.	Emergency LG extension procedure	*Apply (See Para. 7.1)*
5.	Land as soon as practical	

7.5 UNINTENTIONAL LANDING GEAR EXTENSION

CAUTION

An unwanted landing gear extension, with at least one leg moving downward, may be caused by hydraulic fluid loss and it is signaled by

- significant aerodynamic noise increase;

- light and counteractable nose down pitch moment;

- red TRANS light turned on.

1.	Airspeed	*Keep below applicable VLO/VLE*
2.	Landing gear control lever	*DOWN*
3.	Landing Gear lights	*Check*

If a safe landing configuration is obtained (3 greens)

4. Land normally

If a safe landing gear configuration is not obtained:

4.	Emergency LG extension procedure	*Apply (See Para. 7.1)*
5.	**Land as soon as practical**	

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8 SMOKE AND FIRE OCCURRENCE

8.1 ENGINE FIRE ON THE GROUND

1.	**Fuel Selectors**	***BOTH OFF***
2.	**Ignitions**	***ALL OFF***
3.	**Electrical fuel pumps**	***BOTH OFF***
4.	**Cabin heat and defrost**	***OFF***
5.	**MASTER SWITCH**	***OFF***
6.	**Parking Brake**	***ENGAGED***
7.	**Aircraft Evacuation**	**carry out immediately**

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

8.2 ENGINE FIRE DURING TAKEOFF RUN

BEFORE ROTATION: ABORT TAKE OFF

1.	**Throttle Lever**	**BOTH IDLE**
2.	**Rudder**	***Keep heading control***
3.	**Brakes**	***As required***

With aircraft under control

4.	**Fuel Selector**	***BOTH OFF***
5.	**Ignitions**	***ALL OFF***
6.	**Electrical fuel pump**	***BOTH OFF***
7.	**Cabin heat and defrost**	***OFF***
8.	**MASTER SWITCH**	***OFF***
9.	**Parking Brake**	***ENGAGED***
10.	**Aircraft Evacuation**	***carry out immediately***

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

IF THE DECISION IS TAKEN TO CONTINUE THE TAKEOFF:

WARNING

A take-off abort should always be preferred if a safe stop can be performed on ground.

A suggested "GO-NO-GO" criteria is: abort take-off until LG is still down and locked.

Once airborne accelerate to Blue Line Speed (V_{YSE}) before commanding LG retraction.

Take-off planning should take into account that high density altitude and aircraft mass may result in OEI negative climb rate.

V_{YSE} with flap up shall be flown in order to achieve best possible rate of climb after landing gear retraction and engine feathering.

1.	**Operating engine Throttle Lever**	***FULL POWER***
2.	**Operating engine Propeller Lever**	***FULL FORWARD***
3.	**Heading**	***Keep control using rudder and ailerons***
4.	**Attitude**	***Reduce as appropriate to keep airspeed over 62 KIAS***
5.	**Fire affected engine Propeller Lever**	***FEATHER***
6.	**Landing gear control lever**	***UP***
7.	**Airspeed**	***V_{XSE}/V_{YSE} as required***
8.	**Flaps**	***0°***

At safe altitude

9.	Cabin heat and defrost	*BOTH OFF*
10.	Fire affected engine Fuel Selector	*Confirm and OFF*
11.	Fire affected engine Ignitions	*Confirm and BOTH OFF*
12.	Fire affected engine Electrical fuel pump	*Confirm and OFF*
13.	Fire affected engine FIELD	*OFF*

14. **Land as soon as possible** applying *one engine inoperative landing* procedure. See Para. 6.6

8.3 ENGINE FIRE IN FLIGHT

1.	**Cabin heat and defrost**	***BOTH OFF***
2.	**Autopilot**	***OFF***
3.	**Fire affected engine Fuel Selector**	***Confirm and OFF***
4.	**Fire affected engine Ignition**	***Confirm and BOTH OFF***
5.	**Fire affected engine Throttle Lever**	***Confirm and FULL FORWARD***
6.	**Fire affected engine Propeller Lever**	***Confirm and FEATHER***
7.	**Fire affected engine Electrical fuel pump**	***OFF***
8.	**Heading**	***Keep control using rudder and ailerons***
9.	**Attitude**	***Adjust as appropriate to keep airspeed over 62 KIAS***
10.	**Fire affected engine Field**	***OFF***
11.	**Cabin ventilation**	***OPEN***

12. **Land as soon as possible** applying *one engine inoperative landing* procedure. See Para. 6.6

8.4 ELECTRICAL SMOKE IN CABIN ON THE GROUND

1.	**MASTER SWITCH**	***OFF***
2.	**Cabin heat and defrost**	***OFF***
3.	**Throttle Lever**	***BOTH IDLE***
4.	**Ignitions**	***ALL OFF***
5.	**Fuel Selector**	***BOTH OFF***
6.	**Parking Brake**	***ENGAGED***
7.	**Aircraft Evacuation**	**carry out immediately**

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

8.5 ELECTRICAL SMOKE IN CABIN DURING FLIGHT

1.	**Cabin ventilation**	***OPEN***
2.	**Emergency light**	***ON***
3.	**Standby attitude indicator switch**	***ON***
4.	**Gain VMC conditions as soon as possible**	

In case of cockpit fire:

5.	**Fire extinguisher**	***use toward base of flames***

CAUTION

A tripped circuit breaker should not be reset.

If smoke persists, shed electrical supply in order to isolate faulty source by:

6.	FIELD LH and RH	*OFF*
7.	AVIONICS LH and RH	*OFF*
8.	CROSS BUS LH and RH	*BOTH OFF*

CAUTION

A fully charged battery can supply electrical power for at least 30 minutes.

If faulty source is found:

9. It may be possible to restore non faulty power sources (one at a time)

If smoke persists:

WARNING

Before total electrical system shutdown consider gaining VMC condition, at night set personal emergency light on.

Only emergency light and emergency ADI will be electrically powered.

All radio COM and NAV, Landing Gear lever (normal mode) and indication lights, electrical trims and flaps will be unserviceable.

10.	MASTER SWITCH	*OFF*

11. **Land as soon as possible**

When on ground:

12. Aircraft Evacuation *carry out as necessary*

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

9 UNINTENTIONAL SPIN RECOVERY

WARNING

Spin behaviour has not been demonstrated since certification process does not required it for this aircraft category.

Intentional spin is forbidden.

Stall with one engine inoperative is forbidden.

Should an unintentional spin occur, the classic recovery manoeuvre is deemed as being the best action to undertake:

1. **Both engines throttles** ***idle***
2. **Flight Controls** ***centralize***
3. **Rudder** ***fully against rotation until it stops***

10 LANDING EMERGENCIES

10.1 LANDING WITHOUT ENGINE POWER

In case of double engine failure both propellers should be feathered to achieve maximum efficiency. Best glide speed is attained with flap UP and equals V_Y for current aircraft mass and air density altitude. Refer to Section 5, Para. "Enroute Rate of Climb".

CAUTION

Normal landing gear extension requires MASTER switch ON, an efficient battery and takes around 20 seconds.
LG selection should be appropriately anticipated when sure on final.
Flap can be set to T/O or LAND when sure on final to reduce landing ground roll on short field.

Touchdown speed can be as low as 50 kt with flap down.

1. Airspeed

MTOW 1180kg	MTOW 1230 kg
V_Y = 83 KIAS	V_Y = 84 KIAS

2. Flaps — *UP*
3. Emergency landing field — *Select*

WARNING

Emergency landing strip should be chosen considering surface condition, length and obstacles. Wind can be guessed by smoke plumes direction and tree tops or grass bending. Select touchdown direction according to the furrows of a plowed field, not across.

4. Safety belts — *FASTEN and tighten*
5. Flaps — *Set when landing is assured*
6. Landing gear control lever — *DOWN when landing is assured*

CAUTION

To reduce landing gear extension time, evaluate use of emergency control system which requires about 12 sec.

Before touch down

7.	Fuel Selector	*BOTH OFF*
8.	Electrical fuel pump	*BOTH OFF*
9.	Ignitions	*ALL OFF*
10.	MASTER SWITCH	*OFF*

When stopped

11.	Aircraft Evacuation	*carry out if necessary*

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

10.2 LANDING WITH NOSE LANDING GEAR TIRE DEFLATED

WARNING

If possible, as a nose landing gear flat tire condition is known, coordinate fire brigade intervention along runway and report number of persons on board and remaining fuel type and quantity.

If Nose Landing Gear flat tire is confirmed:

Preparation

1.	Crew and passengers safety belts	*Tightly fastened*
2.	If time permits	*Burn fuel to lower landing weight*
3.	Flap setting	*plan approach with Flap Land*

Before ground contact:

4.	Fuel Selector	*BOTH OFF*
5.	Electrical fuel pump	*BOTH OFF*
6.	Ignitions	*ALL OFF*

On touch down:

7.	Landing attitude	*slight nose-up and wings levelled,*
8.	Touchdown speed	*as low as 50 KIAS with flap*
9.	Aircraft nose	*gently lower as speed bleeds off*

After aircraft stops:

10.	FIELD LH and RH	*BOTH OFF*
11.	MASTER SWITCH	*OFF*

CAUTION

Master switch to OFF impairs radio communication and outside aircraft lighting.

12.	Aircraft Evacuation	*carry out if necessary*

WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

10.3 LANDING WITH A KNOWN MAIN LANDING GEAR TIRE DEFLATED


WARNING

An asymmetrical landing gear tire condition (RH and/or LH tires deflated) might turn into a hazardous situation, especially on uneven runways.


WARNING

If possible, as a landing gear tires condition is known, coordinate fire brigade intervention along runway and report number of persons on board and remaining fuel type and quantity.

If a main Landing Gear flat tire is confirmed:

Preparation

1.	Crew and passengers safety belts	*Tightly fastened*
2.	Flap setting	*plan approach with Flap Land*

Before ground contact:

3.	Ignitions	*ALL OFF*
4.	LH and RH Fuel Selector	*BOTH OFF*
5.	LH and RH Electrical fuel pump	*BOTH OFF*

On touch down:

6.	Align for approach	*on the runway centreline*
7.	Touchdown speed	*as low as 50 KIAS*
8.	Touchdown	*on the good tire gear only*
9.	Heading and direction	*maintain applying appropriate aileron and rudder/steering control*
10.	Flattened tire	*keep off the ground as long as possible*

After aircraft stops (or if runway departure is imminent):

11.	FIELD LH and RH	*BOTH OFF*
12.	MASTER SWITCH	*OFF*


CAUTION

Master switch to OFF impairs radio communication and outside aircraft lighting.

13.	Aircraft Evacuation	*carry out if necessary*


WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

10.4 LANDING WITHOUT BRAKES


CAUTION

If possible, select an airport with suitable runway length.

Otherwise, evaluate the possibility to perform a gear up landing (refer to procedure reported on Para. 7.2). In the latter case consider the increasing hazard of an uneven pavement.

1. Safety belts — *FASTEN*

After touch down if runway is deemed insufficient to decelerate:

2. Fuel Selector — *BOTH OFF*
3. Electrical fuel pumps — *BOTH OFF*
4. Ignitions — *ALL OFF*
5. FIELD LH and RH — *BOTH OFF*
6. MASTER SWITCH — *OFF*


CAUTION

Master switch to OFF impairs radio communication and outside aircraft lighting.

Before end of runway or if runway departure is imminent:

7. Landing gear control lever — *UP*

After aircraft stops:

8. Aircraft Evacuation — *carry out if necessary*


WARNING

Consider use of ditching emergency exit to escape in case pilot or passenger doors are blocked, watch for engine hot parts, fuel, hydraulic fluid or oil spills. Leave aircraft in upwind direction.

11 AIRCRAFT EVACUATION

WARNING

Leave the aircraft when engines are fully stopped. Watch for engine hot parts and fuel, hydraulic fluid or oil spills when using fuselage doors. If fuselage doors are unserviceable escape through the ditching emergency exit

In case of engine fire escape from opposite or upwind aircraft side.

Verify (if not yet performed):

1.	**Fuel Selectors**	***BOTH OFF***
2.	**Ignitions**	***ALL OFF***
3.	**Electrical fuel pumps**	***BOTH OFF***
4.	**MASTER SWITCH**	***OFF***
5.	**Parking Brake**	***ENGAGED***
6.	**Leave the aircraft using emergency exits**	

12 DITCHING

WARNING

Contact with water shall happen with aircraft longitudinal axis and direction of motion parallel to the wave at the minimum possible speed. Keep the nose up as long as possible.

Once in the water, the aircraft shall be evacuated through the ditching emergency exit, if available put life vest on and set dinghy out first. Inflate them only outside the aircraft.

If available, try to approach any existing ship in the vicinity in order to be rapidly located and rescued right after ditching.

1.	Landing gear	*UP*
2.	Safety belts	*Tighten and fastened*
3.	Flaps	*FULL*

Before water impact

4.	Fuel Selector	*BOTH OFF*
5.	Electrical fuel pump	*BOTH OFF*
6.	Ignitions	*ALL OFF*
7.	MASTER SWITCH	*OFF*
8.	FIELD LH and RH	*BOTH OFF*
9.	Impact speed	*50 KIAS*

Aircraft evacuation

10.	Emergency exit handle	*rotate clockwise*
11.	Latch door	*push outward*
12.	Life vests	*don*
13.	Evacuate the aircraft	

Supplement G1: pages replacement instructions

SECTION 4 - NORMAL PROCEDURES

Apply following page replacement procedure

Supplement G1 – NORMAL PROCEDURES pages replace Basic AFM Section 4 as a whole.

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SECTION 4 – NORMAL PROCEDURES

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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.
As prescribed by the propeller/governor manufacturer, a drop of 400/500 propeller RPM should be produced during this check. Its aim is to confirm the governor efficiency, not its complete feathering function.
Especially during the first cycle of propeller lever pulling, the governor tendency is to respond to the input with consistent delay, causing the pilot to continue moving back the propeller lever until an abrupt RPM change is observed. This causes an excessive drop in propeller speed that may reach up to 800 RPM in some cases 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. In some cases, it may also result in detonation.
In order to avoid these long term adverse effects, the governor ground check should be performed by slowly and gently pulling the propeller lever. The purging cycle should be repeated 3 times, making sure that the governor closely and firmly controls the rpm.

The following recommendations have to be followed during the test:

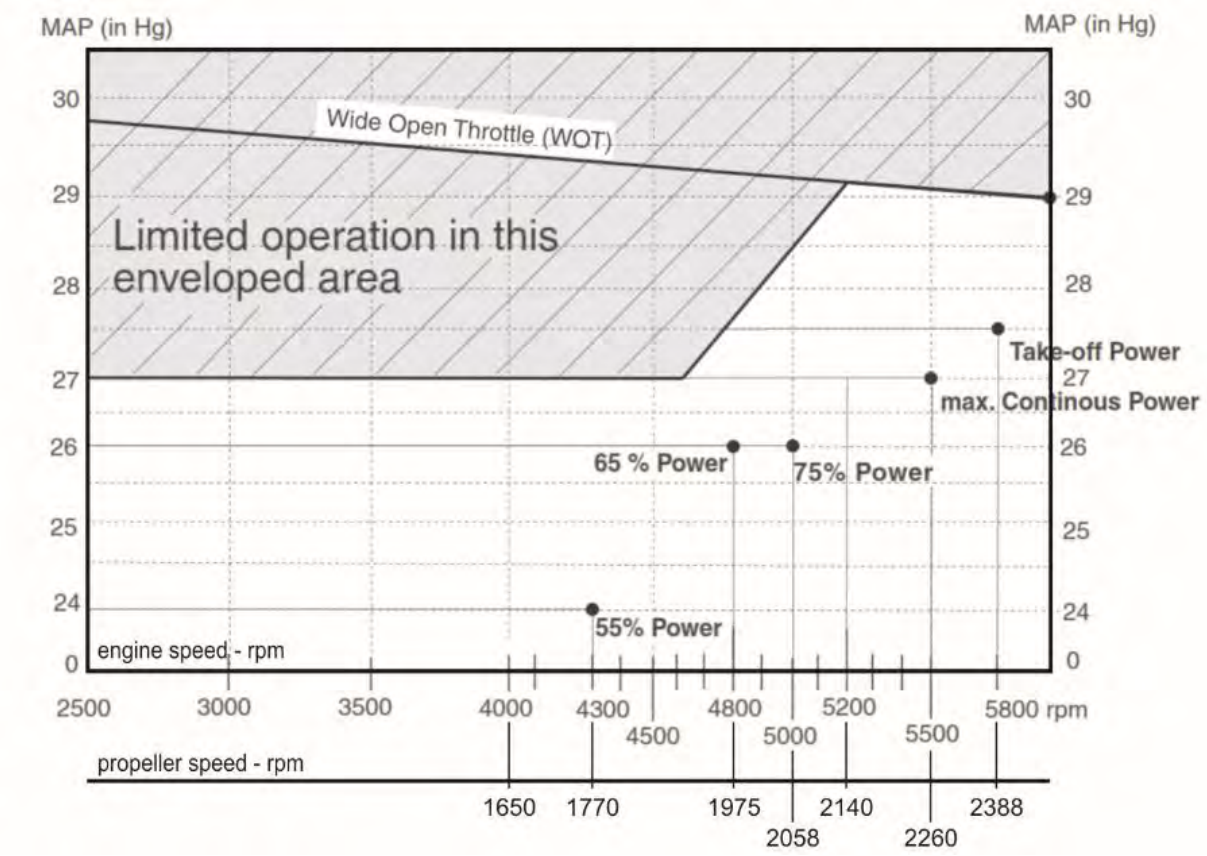
- propeller speed drops shall be of 400/500 propeller RPM
- the cycle shall be repeated 3 times
- the pilot shall be ready to push the propeller lever if a drop of >500 RPM is recorded

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

Useful guideline chart that could be used for best propeller/manifold combination is following reported:



3. Suitable Fuels.

Tecnam remember operators to fill the aircraft with approved and suitable fuels. Use of not approved/unknown fuels may cause damages to the engine.

ONLY USE APPROVED FUELS

For details refer to Section 2 of this manual (or applicable Supplement) and latest issue of Rotax SI-912-016

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.

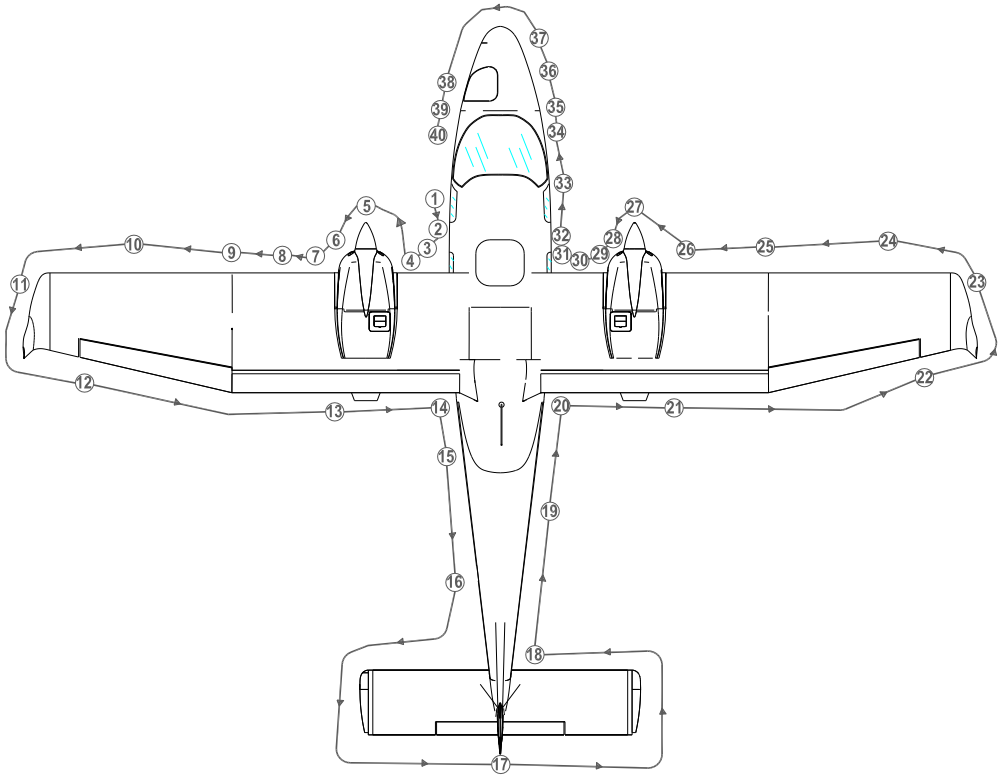


Figure 4.1

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. 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.*

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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*

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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*
2	CHRONOMETER	*START*

Right engine starting

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

NOTE

Cold engine
Throttles idle (fully closed), chokes fully opened.
Soon after starting, advance the throttle to let the propeller reach 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

5	RH Electrical Fuel pump	*ON, check advisory light ON and positive fuel press build up*
6	STROBES	*ON*
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 Throttle lever	*Advance to reach 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*

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 Throttle lever	*Advance to reach 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: *90° ≡110° C*
(or 50° ÷ 130 ° C, if MOD2006/002 is applied).

- CHT / CT: *50° ≡ 135° / 120° C*
- 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*
9	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)*
10	RH Propeller Lever	*GOVERNOR CHECK* *a) Reduce prop speed to 1200 RPM;* *b) move propeller lever back to full forward position;* *c) repeat a) and b) 3 times;* *d) verify that the governor closely and firmly controls the RPM;* *e) verify that 1650 prop RPM are restored with prop lever in full forward position.*

NOTE *Do not cause the propeller speed drop below 1150 RPM in any case.*

11	RH Carburettor heat	*ON, verify propeller RPM decreasing about 100 RPM*
12	RH Carburettor heat	*OFF*
13	RH engine instruments	*CHECK parameters if within green arcs*
14	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)*

15	LH Propeller Lever	*GOVERNOR CHECK* *a) Reduce prop speed to 1200 RPM;* *b) move propeller lever back to full forward position;* *c) repeat a) and b) 3 times;* *d) verify that the governor closely and firmly controls the RPM;* *e) verify that 1650 prop RPM are restored with prop lever in full forward position.*

NOTE *Do not cause the propeller speed drop below 1150 RPM in any case.*

16	LH Carburettor heat	*ON, verify propeller RPM decreasing about 100 RPM*
17	LH Carburettor heat	*OFF*
18	LH engine instruments	*CHECK parameters if within green arcs*
19	LH and RH Fuel quantity indicator	*CHECK consistent with fuel plan*
20	Flaps	*T/O or as required (see Section 5, Take OFF performances)*
21	Pitch trim and rudder trim	*SET neutral position*
22	Flight controls	*Check free*
23	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

CAU-TION

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*
  (or 50° - 130 ° C, if MOD2006/002 is applied).
- CHT/CT: *50° – 135° / 50° - 120° 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.*

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

4 Fuel balance and crossfeed *check as necessary*

NOTE *To evaporate possibly accumulated condensation water, once per flight day (for approximately 5 minutes) 100° C (212° F) oil temperature must be reached.*

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	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. ADDITIONAL GUIDANCE FOR RNAV

Experience of RNAV systems, and Flight FMS in general, has identified the pitfalls of way-point entry error at the receiver as well as inaccuracies and errors in the database itself.

Research and experience have both shown that human error, often the result of a lack of familiarity with the airborne equipment, represents the major hazard in operations using RNAV systems. Therefore, it is imperative that pilots understand their system thoroughly and are able to determine whether it is safe to proceed.

This requires robust procedures, which check for possible errors in the computer database, monitor continued performance of the RNAV systems and enable pilots to identify and avoid not only their own mistakes but also errors in the information presented to them.

Flight planning on RNAV routes should include the following recommendation.

- During the pre-flight planning phase, given a GPS constellation of 23 satellites or less (22 or less for GPS stand-alone equipment that incorporate pressure altitude aiding), the availability of GPS integrity (RAIM) should be confirmed for the intended flight (route and time). This should be obtained from a prediction program either ground-based, or provided as an equipment function, or from an alternative method acceptable to the Authority;
- Where a navigation data base is installed, the data base validity (current AIRAC cycle) should be checked before flight;
- Traditional navigation equipment (e.g. VOR, DME and ADF) should be selected to available aids so as to allow immediate cross-checking or reversion in the event of loss of GPS navigation capability.

1) *Pre-flight Planning*

During the pre-flight planning phase, the availability of the navigation infrastructure, required for the intended operation, including any non-RNAV contingencies, must be confirmed for the period of intended operation. Availability of the onboard navigation equipment necessary for the route to be flown must be confirmed. The onboard navigation database must be appropriate for the region of intended operation and must include the navigation aids, waypoints, and coded terminal airspace procedures for the departure, arrival and alternate airfields.

Where the responsible airspace authority has specified in the AIP that dual PRNAV systems are required for specific terminal P-RNAV procedure, the availability of dual P-RNAV systems must be confirmed. This typically will apply where procedures are effective below the applicable minimum obstacle clearance altitude or where radar coverage is inadequate for the purposes of supporting P-RNAV. This will also take into account the particular hazards of a terminal area and the feasibility of contingency procedures following loss of P-RNAV capability.

RAIM availability must be confirmed with account taken of the latest information

2) Departure

At system initialisation, the flight crew must confirm that the navigation database is current and verify that the aircraft position has been entered correctly. The active flight plan should be checked by comparing the charts, SID or other applicable documents, with the map display. This includes confirmation of the waypoint sequence, reasonableness of track angles and distances, any altitude or speed constraints, and, where possible, which waypoints are fly-by and which are fly-over. If required by a procedure, a check will need to be made to confirm that updating will use a specific navigation aid(s), or to confirm exclusion of a specific navigation aid. A procedure shall not be used if doubt exists as to the validity of the procedure in the navigation database

The creation of new waypoints by manual entry into the RNAV system by the flight crew is not permitted as it would invalidate the affected P-RNAV procedure.

Route modifications in the terminal area may take the form of radar headings or 'direct to' clearances and the flight crew must be capable of reacting in a timely fashion. This may include the insertion in the flight plan of waypoints loaded from the database.

During the procedure and where feasible, flight progress should be monitored for navigational reasonableness, by cross-checks, with conventional navigation aids using the primary display

3) *Arrival*

Prior to the arrival phase, the flight crew should verify that the correct terminal procedure has been loaded. The active flight plan should be checked by comparing the charts with the map display. This includes confirmation of the waypoint sequence, reasonableness of track angles and distances, any altitude or speed constraints, and, where possible, which waypoints are fly-by and which are fly-over. If required by a procedure, a check will need to be made to confirm that updating will exclude a particular navigation aid. A procedure shall not be used if doubt exists as to the validity of the procedure in the navigation database.

Note: as a minimum, the arrival checks could be a simple inspection of a suitable map display that achieves the objectives of this paragraph.

The creation of new waypoints by manual entry into the RNAV system by the flight crew would invalidate the P-RNAV procedure and is not permitted.

Where the contingency to revert to a conventional arrival procedure is required, the flight crew must make the necessary preparation.

During the procedure and where feasible, flight progress should be monitored for navigational reasonableness by cross-checks with conventional navigation aids using the primary display

Route modifications in the terminal area may take the form of radar headings or 'direct to' clearances and the flight crew must be capable of reacting in a timely fashion.

Although a particular method is not mandated, any published altitude and speed constraints must be observed.

In the event that either the GPS or the EGNOS signal is not available at the destination, by the nature of the system, and its susceptibility to interference, there exists the possibility that it

will also be unavailable over a wide area. Therefore, it is probable that the signal will also be unavailable at a nearby diversion aerodrome.

Notwithstanding any normal operational requirements for the identification of an alternate aerodrome, where a RNAV approach is to be flown in conditions where a visual approach will not be possible; pilots should always ensure that either:

1) A different type of approach system is available at the destination, not dependent on GPS data and for which the weather is forecast to be suitable to enable a landing to be made from that approach, or;
2) There is at least one alternate destination within range, where a different type of approach system is available, which is not dependent on GPS data and for which the weather is forecast to be suitable to enable a landing to be made from that approach.

4.1 APPROACH APPLICATIONS

NOTE *When GPS is not approved for the selected final approach course, the message "NOT APPROVED FOR GPS" is displayed. GPS provides guidance for the approach, but the HIS must be switched to a NAV receiver to fly the final course of the approach*

NOTE *If certain GPS parameters (SBAS, RAIM, etc.) are not available, some published approach procedures for the desired airport may not be displayed in the list of available approaches.*

An Approach Procedure (APPR) can be loaded at any airport that has one available, and provides guidance for non-precision and precision approaches to airports with published instrument approach procedures.

NOTE *Only one approach can be loaded at a time in a flight plan. If an approach is loaded when another approach is already in the active flight plan, the new approach replaces the previous approach. The route is defined by selection of an approach and the transition waypoints.*

Whenever an approach is selected, the choice to either "load" or "activate" is given. "Loading" adds the approach to the end of the flight plan without immediately using it for navigation guidance. This allows continued navigation via the intermediate waypoints in the original flight plan, but keeps the procedure available on the Active Flight Plan Page for quick activation when needed. "Activating" also adds the procedure to the end of the flight plan but immediately begins to provide guidance to the first waypoint in the approach.

When selecting an approach, a "GPS" designation to the right of the procedure name indicates the procedure can be flown using the GPS receiver. Some procedures do not have this designation, meaning the GPS receiver can be used for supplemental navigation guidance only.

NOTE

If the GPS receiver cannot be used for primary guidance, the appropriate navigation receiver must be used for the selected approach (e.g., VOR or ILS). The final course segment of ILS approaches, for example, must be flown by tuning the NAV receiver to the proper frequency and selecting that NAV receiver on the CDI

The G950 SBAS GPS allows for flying LNAV and LPV approach service levels according to the published chart.

A sample of how the active approach service level is annunciated on the HSI is shown in the following table:

HSI Annunciation	Description	Example on HSI
LNAV	RNAV GPS approach using published LNAV minima	 ***Approach Service Level***
LPV (available only if SBAS available)	RNAV GPS approach using published LPV minima	

Before reaching the IAF, the flight crew should verify that the correct procedure has been loaded into the receiver's route or flight plan. A comparison with the approach chart should be made including the following:

- The waypoint sequence.
- Reasonableness of the tracks and distances of the approach legs, accuracy of the inbound course and mileage of the FAS.
- Verify from the charts, map display or CDU, which waypoints are fly-by and which are fly-over.
- Check any map display to ensure the track lines actually 'fly-over' or 'fly-by' the respective waypoints in the procedure.

By the time the aircraft reaches the IAF the pilot should have completed the above and been cleared for the approach. Also, the approach must have been activated in the receiver at least by this time.

Approach Applications which are classified as RNP Approach (APCH) in accordance with ICAO Doc 9613 Performance Based Navigation (PBN) Manual (and ICAO state Letter SP65/4-10/53) give access to minima (on an instrument approach procedure) designated as:

LNAV (Lateral Navigation)

This is a Non-Precision or 2D Approach with Lateral only navigation guidance provided by GNSS and an Aircraft Based Augmentation System (ABAS). Receiver Autonomous

Integrity Monitoring (RAIM) is a form of ABAS. Lateral guidance is linear with accuracy to within +/- 0.3 NM parallel to either side of the final approach track.

LPV (Localiser Performance with Vertical Guidance)

This is an Approach Procedure with Vertical Guidance. The Lateral and Vertical guidance is provided by GPS and SBAS. Lateral and vertical guidance are angular with increasing sensitivity as the aircraft progresses down the final approach track; much like an ILS indication. LPV approach and annunciation on HSI is available only is SBAS available.

Before selecting a LPV approach, make sure SBAS is indicated ACTIVE in the GPS status box on AUX-GPS STATUS page on MFD.

If DISABLED highlight the appropriate SBAS SELECTION Box under SBAS softkey under AUX-GPS Status Page on MFD

Should SBAS signal be lost, augmentation is lost. It may be possible to continue with LNAV only but this is reliant on the availability of RAIM.

NOTE: The instrument approach procedures associated with RNP APCH are entitled RNAV (GNSS) to reflect that GNSS is the primary navigation system. With the inherent onboard performance monitoring and alerting provided by GNSS, the navigation specification qualifies as RNP, however these procedures pre-date PBN, so the chart name has remained as RNAV.

Missed approach procedures

Before commencing an RNAV (GNSS) missed approach, a MAP should be possible without reference to GPS derived navigation so that, in the event of a loss of GPS accuracy or loss of integrity during the approach, a safe return to above Minimum Sector Altitude can be made.

This may be possible by dead reckoning (DR) navigation but where this is not possible and the MAP requires reference to terrestrial navigation aids, these must be available, tuned and correctly identified before passing the IAF and remain available throughout the approach.

Reasons for a missed approach are many and if GPS information remains available for the MAP, the pilot must be able to sequence the system correctly past the MAP, in order to follow the published MAP correctly.

Pilots should be fully competent in the necessary selection routines required by their own equipment, in order to transition to the MAP and preserve accurate navigation throughout.

When GPS navigation is NOT available for the MAP, it may be necessary to reset the display function of the HSI/CDI to disengage GPS information and regain VOR/LOC display. Pilots must be fully conversant with navigation display selections in order safely to follow the MAP.

Abnormal procedures for approaches

As the aircraft approaches the FAF (LNAV Only, without SBAS), the receiver automatically perform a final RAIM prediction for the approach. The receiver will not enter the approach mode if this RAIM prediction is negative. In this case, the approach should be discontinued.

However, this RAIM check assumes availability of the full constellation and will not take account of scheduled interruptions or failures. This can lead to a successful RAIM prediction at this point when the RAIM function itself is not available.

If RAIM is lost after passing the FAF the equipment should continue to provide navigation, where possible for five minutes, before giving a RAIM loss indication and this should be enough to complete the approach.

Should RAIM detect an out of tolerance situation, a warning will be given and a missed approach should be initiated immediately

The approach should always be discontinued:

(a) If the receiver fails to engage the correct approach mode or;
(b) In case of Loss Of Integrity (LOI) monitoring or;
(c) Whenever the HSI/CDI indication (or GP indication where applicable) exceeds half scale displacement or;
(d) If a RAIM (or equivalent) warning is activated or;
(e) If RAIM (or equivalent) function is not available and annunciated before passing the FAF.

4.2 PBN (RNAV & RNP) OPERATIONAL ELIGIBILITY

The Garmin GNSS navigation system as installed in this airplane is approved for navigation using GPS and SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR en- route, terminal area, precision and non-precision approach operations.

Both GNSS receivers are required to be operating and receiving usable signals except for routes requiring only one Long Range Navigation sensor.

The G950 System has been shown to be eligible for:

- B-RNAV (RNAV-5)
- RNAV1 / P-RNAV (RNP-1) Enroute and Terminal navigation
- RNP APCH LNAV (does not include APV BARO-VNAV operation which is not cleared)
- LPV with SBAS

provided that the G950 is receiving usable navigation information from at least one GPS receiver.

5. GROUND TOWING, PARKING AND MOORING

5.1. 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.

5.2. 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.

5.3. 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.

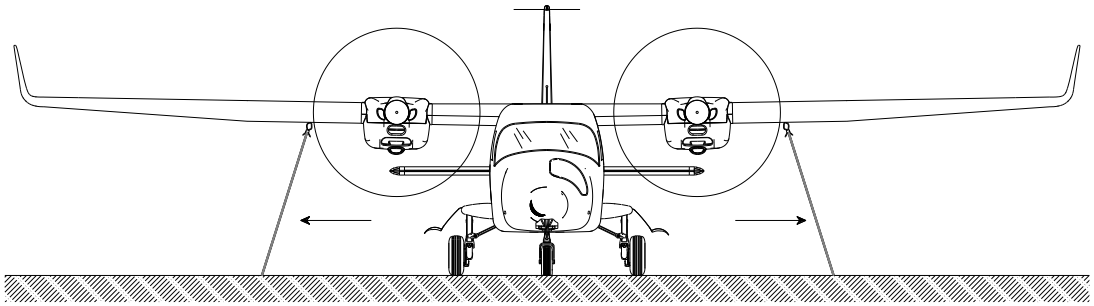
NOTE:

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.

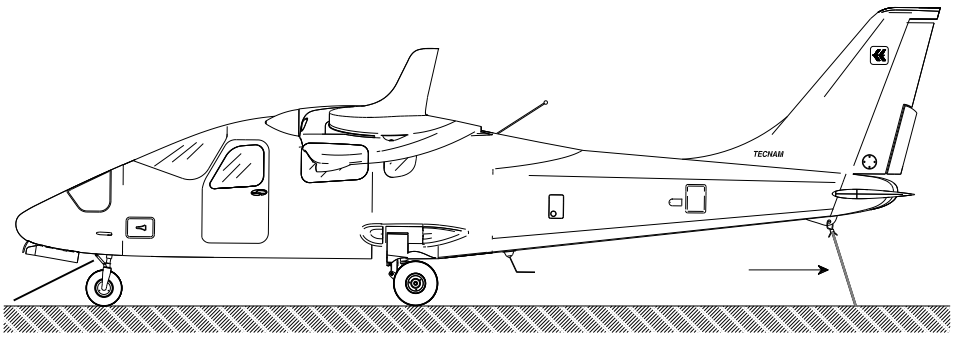
3. Secure pilot control wheel by wrapping the seat belt around it
4. Assure flaps are retracted
5. Electrically ground airplane, by connecting ground cable to the engine muffle
6. Install control locks and protective plugs.
7. Close and lock cabin doors.
8. Secure tie-down cables to the nose gear leg (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

Supplement G1: pages replacement instructions

SECTION 5 - PERFORMANCES

See basic AFM - Section 5

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Supplement G1: page replacement instructions

SECTION 6 - WEIGHT AND BALANCE

See basic AFM - Section 6

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Supplement G1: page replacement instructions

SECTION 7 - AIRFRAME and SYSTEMS DESCRIPTION

Apply following page replacement procedure:

Supplement G1 – AIRFRAME and SYSTEMS DESCRIPTION page		Basic AFM Section 7 page
S7-37 thru S7-46	**REPLACE**	7-37 thru 7-44

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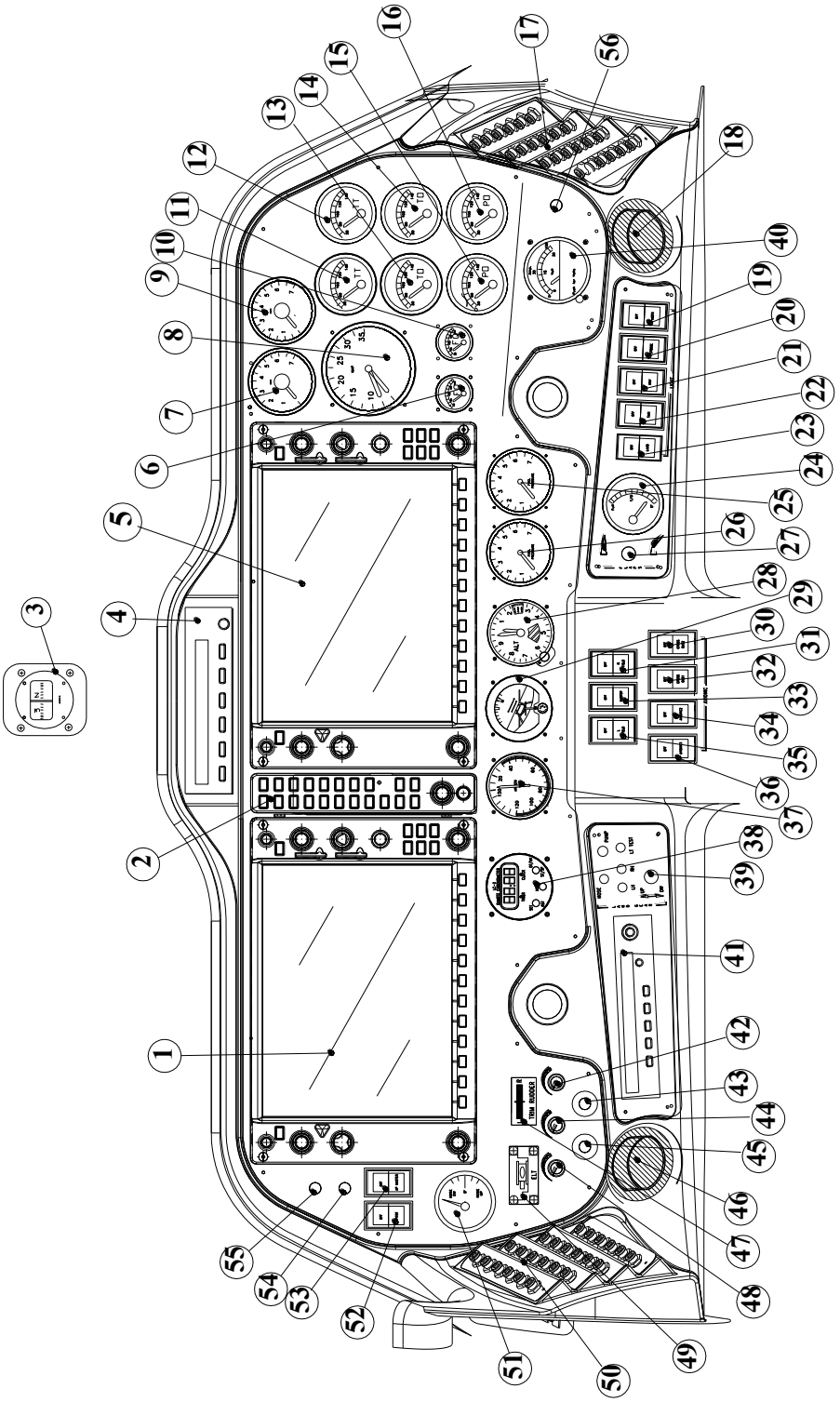
17. INSTRUMENTS PANEL



GARMIN G950 IFDS - Instruments panel (typical layout)

Item	Description
1	GDU 1040 (PFD)
2	GMA 1347
3	Compass
4	A/P Programmer/Computer
5	GDU 1040 (MFD)
6	LH fuel quantity indicator
7	LH R.P.M.
8	Dual M.A.P. indicator
9	RH R.P.M.
10	RH fuel quantity indicator
11	LH CHT
12	RH CHT
13	LH Oil Temperature
14	RH Oil Temperature
15	LH oil pressure
16	RH oil pressure
17	RH breakers panel
18	RH ram air inlet
19	Instruments light switch
20	Strobe light switch
21	Navigation light switch
22	Taxi light switch
23	Landing light switch
24	Position flaps indicator
25	RH fuel pressure
26	LH fuel pressure
27	Flap switch
28	Standby Altimeter
29	Standby Attitude indicator
30	RH Cross bus switch

Item	Description
31	RH Field
32	LH Cross bus switch
33	Master switch
34	RH Avionic switch
35	LH Field
36	LH Avionic switch
37	Standby Airspeed indicator
38	Chronometer
39	LG control knob
40	Voltammeter Indicator
41	ADF control panel
42	Cockpit light dimmer
43	Cabin heat (warm air from RH engine)
44	Avionics lights dimmer
45	Cabin heat (warm air from LH engine)
46	LH ram air inlet
47	Trim rudder indicator
48	Switches built-in lights dimmer
49	ELT Indicator
50	RH breakers panel
51	Pitch trim indicator
52	Pitot heat switch
53	A/P Master switch
54	A/P trim master switch
55	Fire Detector push-to-test
56	LH/RH Ammeter selector switch

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18. ELECTRICAL SYSTEM

Primary DC power is provided by two engine-driven generators which, during normal operations, operate in parallel.

Each generator is rated at 14,2-14,8 Vdc, 40 Amp, and it is fitted with an integrated regulator, which acts to maintain a constant output voltage, and with an automatic overvoltage device protecting the circuits and the electric components from an excessive voltage caused by generator failures.

The power rating of the each generator is such that if one generator fails the other one can still supply the airplane equipment to maintain flight safety.

Secondary DC power is provided by a battery (lead type - Gill Teledyne G35, 12 V, 38-Ah in 20h run time) and an external DC power source can be connected to the aircraft DC distribution system.

On the instruments panel, right side, it is installed a voltmeter/ammeter. The ammeter section can indicate the current supplied by either left or right generator switching a dedicated selector.

There are five different busses (make reference to Figure 11):

- Battery bus
- LH Generator bus
- RH Generator bus
- LH Avionics bus
- RH Avionics bus

The distribution system operates as a single bus with power being supplied by the battery and both generators but it is possible to separate the left busses from the right busses when required by means of the Cross Bus switches.

All electrical loads are divided among the five busses on the basis of their importance and required power: equipment with duplicate functions is connected to separate busses.

The Battery bus, which supplies the most important loads, is energized from three sources: the battery and both generators. This allows the bus for remaining active also in case of two independent faults in the supply paths.

The following loads are connected to the battery bus:

Battery Bus
GMA 1347 Audio Panel
GIA #1
GDU PFD
Cooling Fan
Converter 1
Standby attitude indicator
LH and RH Fuel electrical pump
LH and RH Fuel pressure
LH and RH Fuel quantity
LH and RH Oil pressure
LH and RH Oil temperature
LH and RH CHT
LH and RH RPM indicator
Cabin lights
Cockpit lights
Switches built-in lights
Avionics lights
Strobe lights
Flaps
Doors pressure switches
Engine hour meter (2 units)
Turn coordinator (A/P slaved)
LG hydraulic pump
LG indicating & control system
LH and RH Fire detector
Chronometer
12V cabin electrical power sockets (2 units)

In addition, directly on the battery, the following devices are connected:

• Emergency back-up attitude indicator (RH attitude indicator – usually supplied from RH generator bus), when installed;
- Emergency Light
- Chronometer

The first two devices are controlled by the pertinent switches located on the LH breakers rack.

The other loads are so divided among following busses:

LH GEN Bus	LH Avionic Bus
Pitot heat	DME
Landing light	Transponder
Taxi light	Encoder altimeter

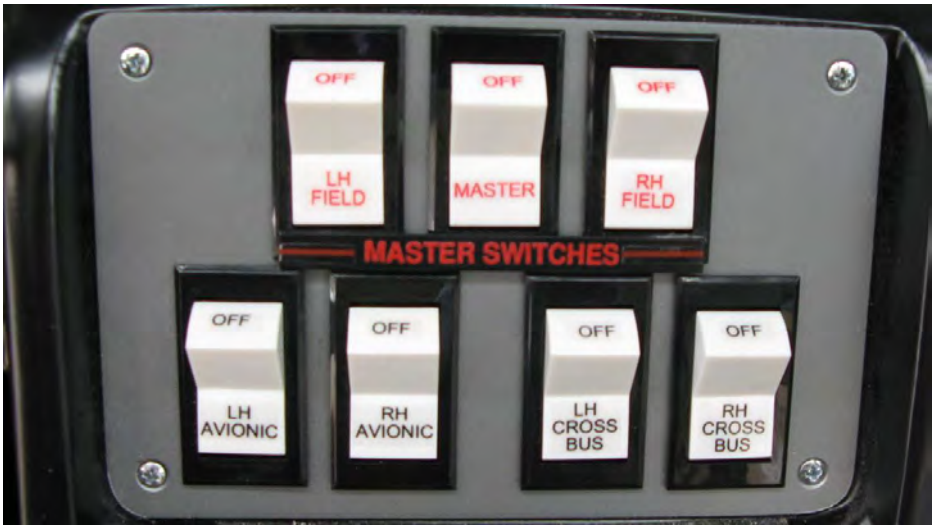
RH GEN Bus	RH Avionic Bus
NAV lights	ADF
Rudder trim	COM 2
Stall warning	NAV 2
RH attitude indicator	A/P (*)
	A/P Pitch Trim (*)

(*) if installed

On the central pedestal (see Figure below) there are seven switches disposed on two rows: on the first row there is the MASTER SWITCH which allows for connecting, through the battery relay, the battery to the battery bus.

LH and RH FIELD switches control the pertinent generator: setting the switch to OFF puts the pertinent generator off-line.

In correspondence of the second row there are 4 switches LH/RH AVIONIC and LH/ RH CROSS BUS.



Central pedestal switches console

The first two allow, through a relay, for cutting off the power supply to the pertinent avionic bus.

The second ones allow, through a relay, for realizing the parallel connection between the pertinent generator bus and the battery bus. Setting these ones to OFF,

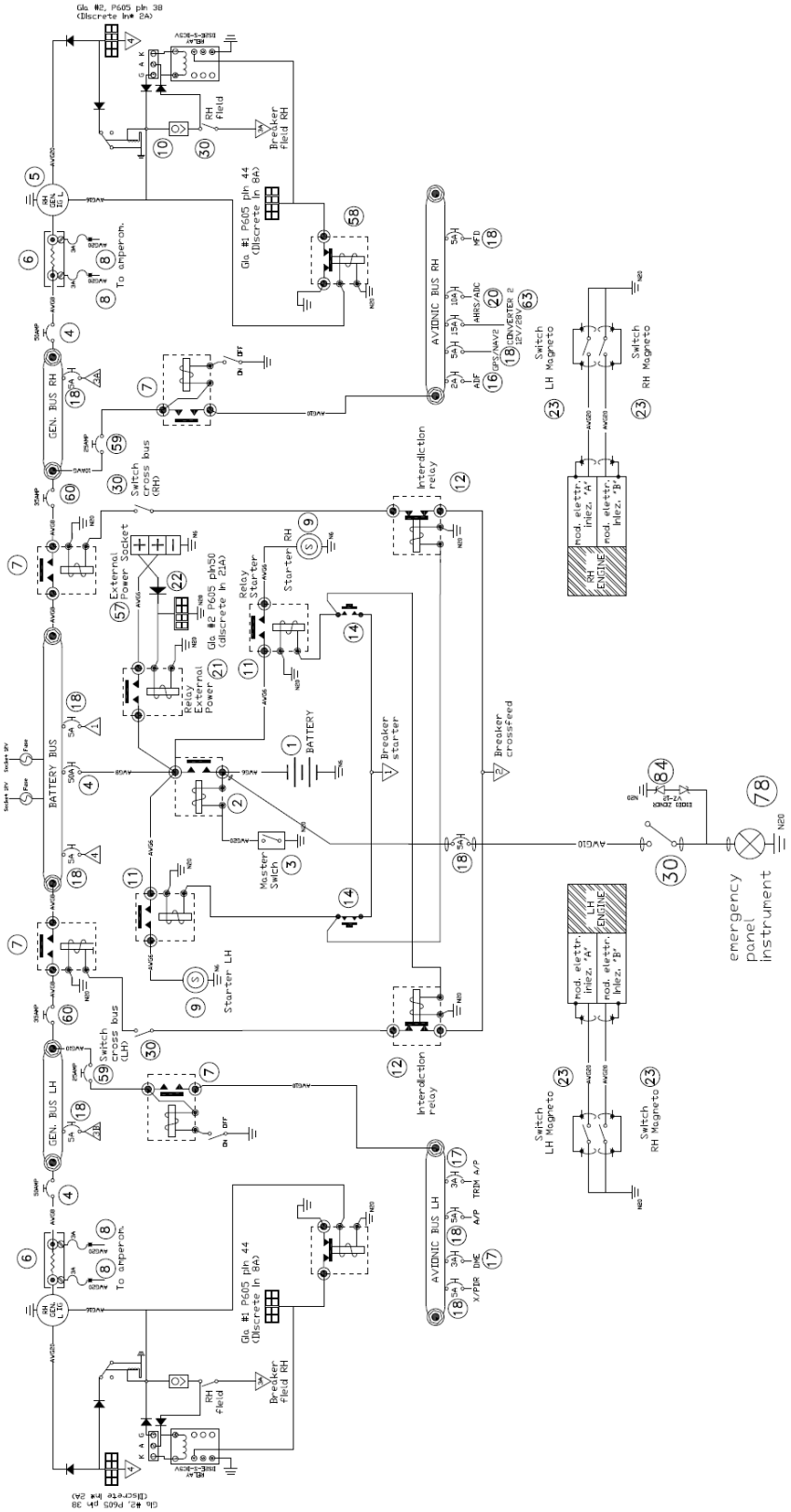
the pertinent generator bus (and related avionic bus supplied) is separated from the battery bus and from opposite generator bus.

When both generators are correctly operating and all above mentioned switches are in ON position, all the busses are connected to the generators.

The ignition switches, two for each engine and grouped on the over head panel, are instead independent from the airplane electrical system (generation and distribution); they only control and open the engine electrical circuit.

WARNING

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



Electric system schematic

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SUPPLEMENT NO. G2 – S-TEC FIFTY FIVE X AUTOPILOT FOR GARMIN G950

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
			DO	OoA	HDO	
0	all	Editorial change (*)	A. Sabino	C. Caruso	M. Oliva	DOA privileges

Note (*): this Supplement has been originally issued under EASA Major Design Change Approval no. 10029331 (dated 18 March 2010)

List of Effective Pages

Page	Revision	Page	Revision
G2-1	Rev 0	**G2-6**	Rev 0
G2-2	Rev 0	**G2-7**	Rev 0
G2-3	Rev 0	**G2-8**	Rev 0
G2-4	Rev 0	**G2-9**	Rev 0
G2-5	Rev 0	**G2-10**	Rev 0

INTRODUCTION

This section contains supplemental information to operate, in a safe and efficient manner, the aircraft when equipped with S-TEC Fifty Five X autopilot device interfacing Garmin G950 IFDS.

GENERAL

The System Fifty Five X is a rate based autopilot. When in control of the roll axis, the autopilot senses turn rate, as well as closure rate to the selected course, along with the non-rate quantities of heading error, course error and course deviation indication.

When in control of the pitch axis, the autopilot senses vertical speed, acceleration, and closure rate to the selected glideslope, along with the non-rate quantities of altitude and glideslope deviation indication.

These sensed data provide feedback to the autopilot, which processes them in order to control the aircraft through the use of mechanisms coupled to the control system.

The "autotrim" function senses when the aircraft needs to be trimmed about the pitch axis, and responds by driving the trim servo in the proper direction to provide trim.

LIMITATIONS (EASA APPROVED)

NOTE

The S-TEC "Pilot's Operating Handbook Fifty Five X"(4th Edition – First Revision dated March 01, 2008 or a more updated version) must be carried in the aircraft and made available to the pilot at all time.

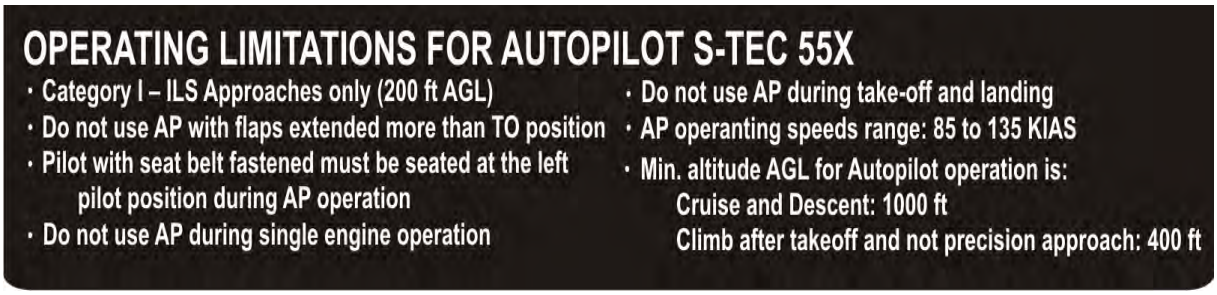
NOTE

In accordance with FAA recommendation (AC 00-24B), use of basic "Altitude Hold" mode is not recommended during operation in severe turbulence.

Following operating limitations shall apply when the aircraft is equipped with S-TEC Fifty Five X autopilot:

- The Autopilot is certified for Category I – ILS Approaches [with a decision height not lower than 200 feet AGL (61m)]
- Autopilot operation forbidden with flaps extended more than TO position
- During Autopilot operation, a pilot with seat belt fastened must be seated at the left pilot position
- The use of Autopilot during single engine operation is forbidden
- Autopilot DISC during take-off and landing
- Maximum speed for Autopilot operation is 135 KIAS
- Minimum speed for Autopilot operation is 85 KIAS
- Minimum altitude AGL for Autopilot operation is:
    a. Cruise and Descent: 1000 ft
    b. Climb after takeoff and not precision approach: 400 ft
    c. ILS CAT I precision approach: 200 ft

On the instrument panel, in clear view of the pilot, it is placed the following placard reminding the observance of aircraft operating limitations during Autopilot operation:



EMERGENCY PROCEDURES

NOTE

In event of autopilot malfunction, or when the system is not performing as expected or commanded, take immediately the aircraft control disconnecting the autopilot which must be set inoperative until the failure has been identified and corrected.

Altitude lost during a pitch axis autopilot malfunction and recovery

Following table addresses the altitude lost during a pitch axis malfunction and recovery for each reported flight phase:

Flight phase	Altitude loss
Climb	200 ft
Cruise	150 ft
Descent	200 ft
Maneuvering	50 ft
Approach	80 ft

Autopilot hardover or failure to hold the selected heading

In case of Autopilot hardover or failure to hold the selected heading, apply following procedure:

Accomplish items 1 and 2 simultaneously:

1. Airplane control wheel	*GRASP FIRMLY and OVERPOWER if necessary to regain aircraft control*
2. AP DISC/TRIM INTR switch	*PRESS*
3. AP MASTER SWITCH	*OFF*
4. AP Circuit Breaker	*PULL*

CAUTION

When Autopilot is disconnected as a consequence of a malfunction, hold the control wheel firmly: it may be necessary up to 35 pounds (15.8 daN) of force on the control wheel to hold the airplane level.

NOTE

When Autopilot is disconnected, it may be necessary operate the pitch trim through either the Manual Electric Trim Switch or the Trim Wheel.

Electric trim malfunction

In case of Electric Trim malfunction (either in AP Autotrim mode or when manually operated through the Manual Electric Trim Switch), apply following procedure:

1. AP DISC/TRIM INTR switch — *PRESS and HOLD*
2. TRIM MASTER SWITCH — *OFF*
3. TRIM Circuit Breaker — *PULL*
4. AP DISC/TRIM INTR switch — *RELEASE*

CAUTION

When Autopilot is disconnected because of a pitch trim malfunction, hold the control wheel firmly: it could be necessary up to 35 pounds (15.8 daN) of force on the control wheel to hold the airplane level.

NOTE

When electric trim is disconnected, it may be necessary operate the pitch trim through the Trim Wheel.

NOTE

When electric trim is disconnected, Autopilot system can be operated both in pitch and roll modes; nevertheless, when a pitch mode (ALT HOLD, VS, GS) is engaged, the Autopilot will provide an annunciation whenever it is necessary to manually trim the aircraft about the pitch axis using the Trim Wheel. Make reference to S-TEC "Pilot's Operating Handbook Fifty Five X"(4th Edition – First Revision dated March 01, 2008 or a more updated version).

Heading information signal lost

When AP is engaged and the heading information is lost (red X on display field – make also reference to Supplement G1 – Emergency procedures), the AP must be disconnected applying following procedure:

Accomplish items 1 and 2 simultaneously:

1. Airplane control wheel	*GRASP FIRMLY and OVERPOWER if necessary to regain aircraft control*
2. AP DISC/TRIM INTR switch	*PRESS*
3. AP MASTER SWITCH	*OFF*
4. AP Circuit Breaker	*PULL*

5. Refer to other navigation means for heading information

CAUTION

When Autopilot is disconnected as a consequence of a malfunction, hold the control wheel firmly: it may be necessary up to 35 pounds (15.8 daN) of force on the control wheel to hold the airplane level.

NOTE

When Autopilot is disconnected, it may be necessary operate the pitch trim through either the Manual Electric Trim Switch or the Trim Wheel.

NORMAL OPERATIONS

Normal operating procedures, including pre-flight checks, are described on S-TEC "Pilot's Operating Handbook Fifty Five X" (4th Edition – First Revision dated March 01, 2008 or a more updated version).

Status/mode annunciations and/or visual representations are simultaneously displayed on both the G950 (AFCS Status Box and/or PFD) and the S-TEC Fifty Five X Autopilot Display.

Make reference to Garmin G950 Pilot's Guide for Tecnam P2006T (P/N 190-01146-00) – last issue.

WARNING

The vertical speed mode is used to establish and hold a PILOT selected vertical speed. Since the autopilot receives no airspeed information, it is the responsibility of the pilot to ensure that the vertical speed selection is within the operating limits of the aircraft's capabilities. Selection of a vertical speed beyond the capability of the aircraft can create a condition of reduced airspeed, and possibly lead to a stall condition.

PERFORMANCES

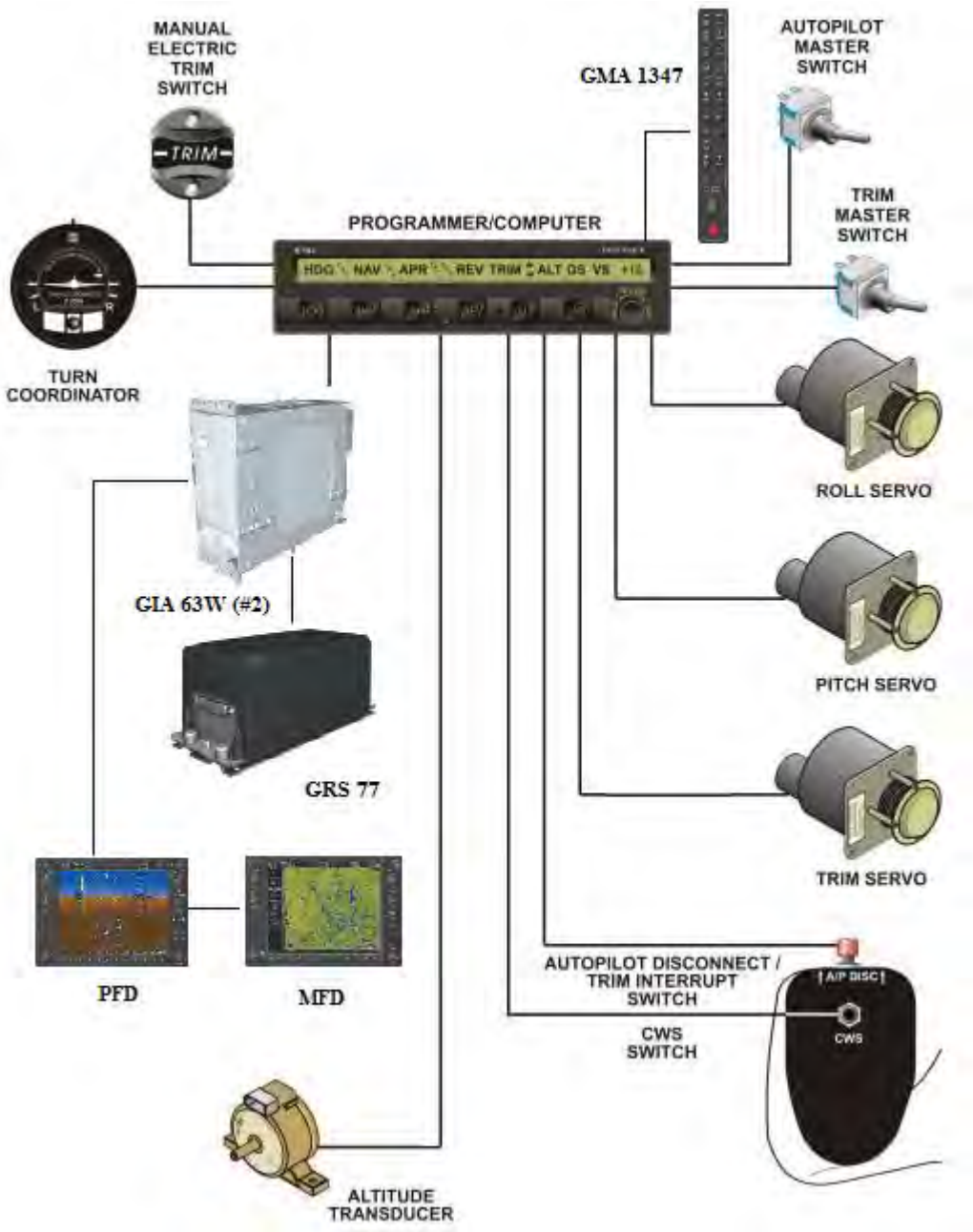
S-TEC Fifty Five X Autopilot employment does not affect the aircraft performances.

WEIGHT AND BALANCE

See Section 6 of this Manual.

SYSTEMS

The System Fifty Five X Block Diagram is shown in the following figure.



SUPPLEMENT NO. G3 – KR 87 ADF SYSTEM FOR GARMIN G950

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval Or Under DOA Privileges
			DO	OoA	HDO	
0	all	Editorial change (*)	A. Sabino	C. Caruso	M. Oliva	DOA Privileges

Note (*): this Supplement has been originally issued under EASA Major Design Change Approval no. 10029633 (dated 8 April 2010)

List of Effective Pages

Page	Revision	Page	Revision
G3-1	Rev 0	**G3-3**	Rev 0
G3-2	Rev 0	**G3-4**	Rev 0

INTRODUCTION

This section contains supplemental information to operate, in a safe and efficient manner, the aircraft when equipped with ADF KR 87 device in conjunction with Garmin G950 system.

GENERAL

KR 87 is an ADF for navigation with respect to the Non Directional Beacon stations.

LIMITATIONS

ADF KR 87 manuals do not address operating limitations more severe than those usually applicable to the P2006T.

EMERGENCY PROCEDURES

Particular meteorological conditions can distort the equipment indications. Therefore, to avoid false indications about NDB direction, it is necessary to select ANT function in order to query the selected station and to listen to its identification code.

Near electrical interferences (electrical storms), ADF indicator tends to head toward the interferences themselves. Take into account this likelihood when the indicator heads, for example, toward highly cloudy or stormy zones.

Wrong indications could arise also during night flights, near mountainous reliefs and as effect of the coastal refraction.

NORMAL OPERATIONS

Normal operating procedures are reported on the following documents:

1) Garmin G950 Pilot's Guide for Tecnam P2006T (P/N 190-01146-00) – last issue.
2) ADF system "Pilot's guide and Reference", P/N KIKR87-PG-C - last issue.

Bearing information is displayed on the Garmin G950 PFD, to the lower sides of the HSI: the PFD softkeys BRG1 and BRG2 cycles respectively Bearing 1 and Bearing 2 Information Window through the different bearing sources, including ADF/frequency.

Pressing the ADF Key on the GMA 1347 Audio Panel turns ADF receiver audio on or off on the headset/speaker.

PERFORMANCES

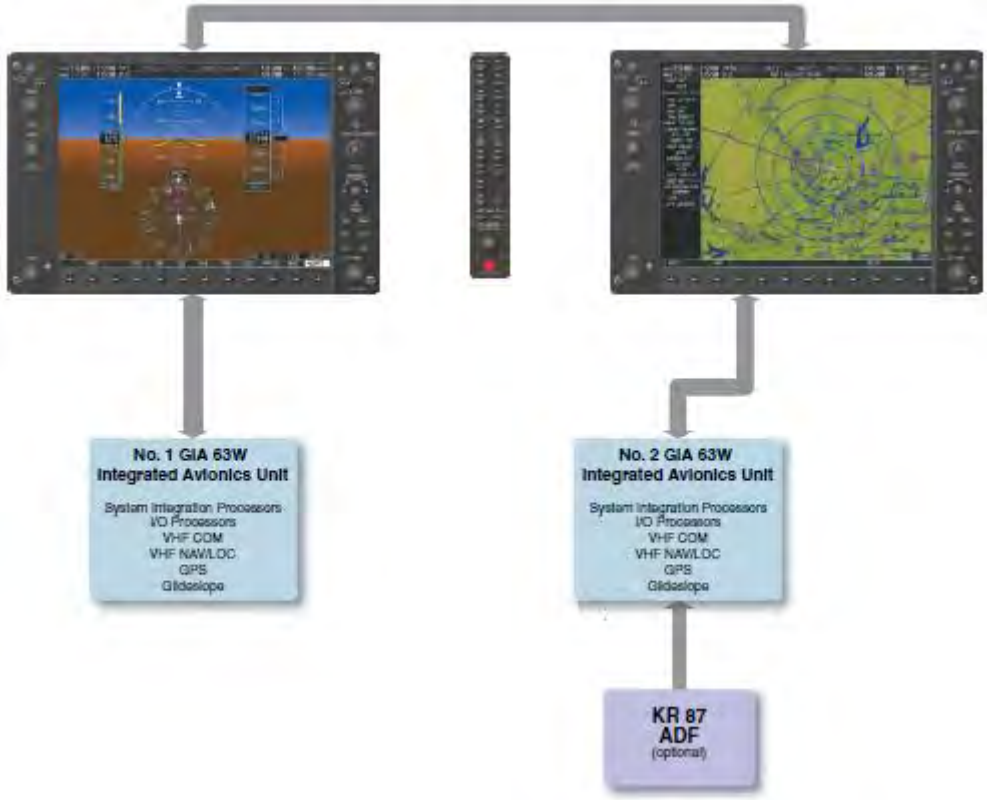
ADF KR-87 employment does not affect the aircraft performances.

WEIGHT AND BALANCE

See Section 6 of this Manual.

SYSTEMS

Refer to the guide “KR-87” P/N KIKR87-PG-C for a system description. The interface with Garmin G950 is shown on the following Figure.



SUPPLEMENT NO. G4 – KN 63 DME SYSTEM FOR GARMIN G950

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval Or Under DOA Privileges
			DO	OoA	HDO	
0	-	See Note (*)				

Note (*): this Supplement has been originally issued under EASA Major Design Change Approval no. 10029633 (dated 8 April 2010)

List of Effective Pages

Page	Revision	Page	Revision
G4-1	Rev 0	**G4-3**	Rev 0
G4-2	Rev 0	**G4-4**	Rev 0

INTRODUCTION

This section contains supplemental information to operate, in a safe and efficient manner, the aircraft when equipped with DME KN 63 device in conjunction with Garmin G950 system.

GENERAL

KN 63 is a DME equipment fitted with a remote module interfacing the Garmin G950 system. Indications are displayed above the PFD BRG1 Information Window.

LIMITATIONS

DME KN 63 manuals do not address operating limitations more severe than those usually applicable to the P2006T.

EMERGENCY PROCEDURES

In determined conditions, near the beacon, DME signal can be lost or distorted. Take into account this likelihood when a beacon approach is performed.

NORMAL OPERATIONS

Normal operating procedures are reported on Garmin G950 Pilot's Guide for Tecnam P2006T (P/N 190-01146-00) – last issue.

Make reference also to "KN 63 Installation Manual ", P/N 006-00176 Rev. 4 dated October 2004.

The PFD softkey DME displays the DME Tuning Window, allowing tuning and selection of the DME.

The DME Information Window is displayed above the BRG1 Information Window and shows the DME label, tuning mode (NAV1, NAV2, or HOLD), frequency, and distance. When a signal is invalid, the distance is replaced by "–.– – NM".

Pressing the DME Key on the GMA 1347 Audio Panel turns DME audio on or off on the headset/speaker.

PERFORMANCES

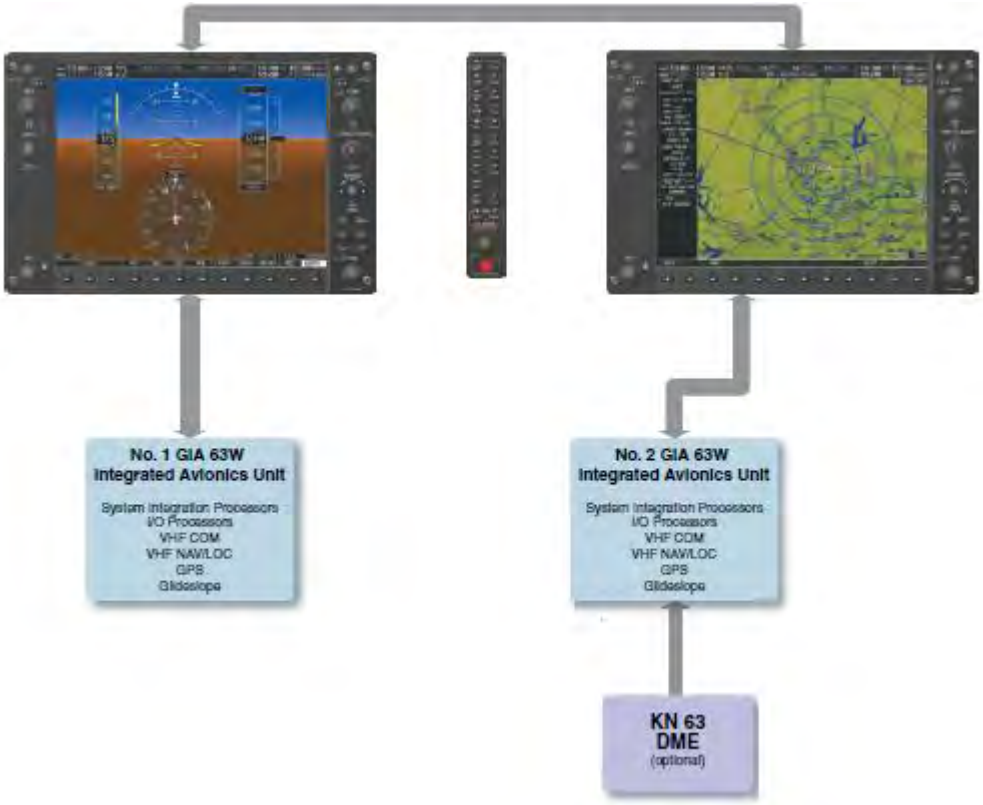
DME KN 63 employment does not affect the aircraft performances.

WEIGHT AND BALANCE

See Section 6 of this Manual.

SYSTEMS

Refer to the guide "KN 63 Installation Manual", P/N 006-00176 Rev. 4 dated October 2004 for a complete system description. The interface with Garmin G950 is shown on the following Figure.



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SUPPLEMENT NO. G5 – ENGINE STARTING BATTERY

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
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G5-1	Rev 0	**G5-3**	Rev 0
G5-2	Rev 0	**G5-4**	Rev 0

INTRODUCTION

This section contains information to operate the airplane equipped with a supplemental battery dedicated to engines starting.

GENERAL

The engine starting battery is housed in a dedicated box under the main battery box: both batteries are accessible through the inspection cap F10 on the left side of the tail cone.

LIMITATIONS

See Section 2 of this Manual.

EMERGENCY PROCEDURES

In event of the following failure conditions, addressed on Section 3 of this Manual and leading to fly without power generation system:

- **Both generators failure (Para. 3.1)**
- **Both generators overvoltage (Para 3.3)**
- **Inflight engine restart (Para 8.2)**

apply, at the end of related checklist, following procedure:

EMERG BATT switch *ON*

WARNING

push the Emergency battery switch to ON to avoid a power generation system failure.

NORMAL OPERATIONS

During Cockpit Inspections (see Para. 3.2 – Section 4 of this Manual), perform also following check:

Eng. Starting Battery Voltmeter *CHECK 12 to 14 Volt*

PERFORMANCES

See Section 5 of this Manual.

WEIGHT AND BALANCE

For weight and balance, make reference to Section 6 of this Manual; additionally, the equipment list reported on Para. 5 is so integrated:

EQUIPMENT LIST		AIRCRAFT S/N__	DATE:		
REF.	DESCRIPTION	P/N	INST	WEIGHT [kg]	ARM [M]
AVIONICS & MISCELLANEOUS					
A14-1	Engine Starting Battery (EnerSys SBS8)		X	2.7	3.7

SYSTEMS

When airplane embodies the design change in subject, in addition to the main battery, a dedicated engine starting battery is introduced.

The entire primary loads stand connected to the main battery itself and the engine starting battery is recharged by the generators.

This modification is transparent to the crew because it does not change deeply the usual normal and emergency procedures.

Additionally, in event of the overall loss of power generation, the starting battery can be put in parallel with the main battery by means of the EMERG BATT switch activation.

In order to allow the charging status check of the battery, a voltmeter is provided. Pushing the button close to the voltmeter, crew can read the battery status.

Both batteries are accessible through the inspection cap F10 on the left side of the tail cone.

When the design change in subject is embodied, following placards are installed on the airplane:

Description	Placard	Place
Engine starting battery voltmeter location		Close to the voltmeter
Batteries compartment location		Fuselage tail cone, left side

SUPPLEMENT NO. G6 – POWER SUPPLY FROM BUILT-IN GENERATORS

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
			DO	OoA	HDO	
0	all	Editorial change (*)	A. Sabino	C. Caruso	M. Oliva	DOA privileges

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G6-1	Rev 0	**G6-4**	Rev 0
G6-2	Rev 0	**G6-5**	Rev 0
G6-3	Rev 0	**G6-6**	Rev 0

INTRODUCTION

This section contains information to operate the airplane equipped with built-in generators.

GENERAL

The Rotax engine built-in generators, one for each engine, feed two bus bars.

LIMITATIONS (EASA APPROVED)

Following limitations must apply when the built in generators are operative:

During Take-off, Climb, Landing and Single Engine operations:

LH and RH AUX FIELD switch	*BOTH OFF*

EMERGENCY PROCEDURES

In event of the following failure conditions (addressed on Section S3 of this Manual):

- **Single Engine operations**
- **Single generator failure (Para. 3.2)**
- **Single generator overvoltage (Para 3.4)**
- **Both generators failure (Para. 3.1)**
- **Both generators overvoltage (Para 3.3)**
- **Engine securing (Para. 5)**
- **Electrical system overall failure (Para. 7.1)**
- **All smoke and fire occurrences (Para 10.1 to 10.5)**

apply following procedure:

LH and RH AUX FIELD switch	*BOTH OFF*

NORMAL OPERATIONS

See Section 4 of this Manual.

PERFORMANCES

See Section 5 of this Manual.

WEIGHT AND BALANCE

See Section 6 of this Manual.

SYSTEMS

When the airplane embodies the design change in subject, the Rotax engine built-in generators are enabled in order to supply power to two bus bars.

Each built-in generator is activated by means of a switch (LH and RH AUX FIELD) located on the LH breakers rack where are located also the breakers related to the auxiliary power generation system.

LH breakers rack: built-in generators field switches and system related breakers (panel type 1)

When panel type 2 is installed (see picture below), each generator field is first excited selecting START on the toggle switch. Then, to allow power generation, toggle switch must be set to ON position.

LH breakers rack: built-in generators field switches and system related breakers (panel type 2)

For both panels, the light (switch built-in light for panel 1) indicates that the electrical power is generated.

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SUPPLEMENT NO. G7

AFM SUPPLEMENT FOR CIS COUNTRIES OPERATORS

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
			DO	OoA	HDO	
0	-	See Note (*)				

Note (*): this Supplement has been originally issued on 12 November 2010, after EASA Third Country Validation process completion.

List of Effective Pages

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G7-1	Rev 0	**G7-13**	Rev 0
G7-2	Rev 0	**G7-14**	Rev 0
G7-3	Rev 0	**G7-15**	Rev 0
G7-4	Rev 0	**G7-16**	Rev 0
G7-5	Rev 0	**G7-17**	Rev 0
G7-6	Rev 0	**G7-18**	Rev 0
G7-7	Rev 0	**G7-19**	Rev 0
G7-8	Rev 0	**G7-20**	Rev 0
G7-9	Rev 0	**G7-21**	Rev 0
G7-10	Rev 0	**G7-22**	Rev 0
G7-11	Rev 0	**G7-23**	Rev 0
G7-12	Rev 0	**G7-24**	Rev 0

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INTRODUCTION

This supplement applies for CIS countries operators.

GENERAL

This supplement must be placed in EASA Approved P2006T Aircraft Flight Manual Section 9, if the airplane is certified to the CIS configuration. The information contained herein complements the basic information in the EASA Approved Aircraft Flight Manual. For limitations, procedures, and performance information not contained in this supplement, refer to the EASA Approved Aircraft Flight Manual.

LIMITATIONS (EASA APPROVED)

APPROVED MANEUVERS

Non aerobatic operations include:

- Any manoeuvre pertaining to “normal” flight
- Stalls
- Lazy eights
- Turns in which the angle of bank is not more than 60°
- Chandelle

WARNING

Acrobatic manoeuvres, including whip stalls, spins and turns with angle of bank of more than 60°, are not approved for such a category. In addition, stall with one engine inoperative is forbidden.

WARNING

Limit load factor could be exceeded by moving flight controls to maximum deflection at a speed above V_A=V_O (118 KIAS, Manoeuvring Speed).

AMBIENT TEMPERATURE

Ambient temperature: from -25°C to +40°C.

FLIGHT ALTITUDE

Flight Altitude limitation: 3000 m (9800ft) and 3600 m (11800ft) for max. 30 minutes.

AIRFIELD ELEVATION

Maximum airfield elevation (Pressure Altitude): less than 2400 m (8000ft).

OPERATION FROM UNPAVED RUNWAYS

Operation from unpaved runways is limited by soil strength of 6 kg per sq. centimeter ($\sigma \geq 6 kg/cm^2$).

OVER-WATER FLIGHTS

Extended over-water flights are allowed within the limitations prescribed by CIS operational regulations.

FLIGHT CREW

Minimum permitted: 1 pilot
Maximum people on board: 4 people (including pilot)

NOTE If right control wheel is not removed, right seat may be occupied by the crew member.

OTHER PLACARDS

Description	Placard	Place
Smoking ban	NO SMOKING НЕ КУРИТЬ	Instruments panel, right side
Ditching emergency exit: opening instructions	 АВАРИЙНЫЙ ВЫХОД НА ВОДУ 1. Повернуть 2. Сильно толкнуть дверь	Ditching emergency exit handle: internal side
Ditching emergency exit: opening instructions	 АВАРИЙНЫЙ ВЫХОД НА ВОДУ 1. Повернуть 2. Сильно толкнуть дверь	Ditching emergency exit handle: external side
Door locking system: bypass instructions	 ДЛЯ АВАРИЙНОГО ДОСТУПА 1. Нажать вниз и удержать красный флажок 2. Открыть дверь	Main door and emergency exit: external side

Description	Placard	Place
Door locking system: by-pass instructions	 ДЛЯ АВАРИЙНОГО ВЫХОДА 1. Нажать вниз и удержать красный флажок 2. Открыть дверь	Main door and emergency exit: internal side
Main door: exit instructions	 ПРЕДУПРЕЖДЕНИЕ Перед открытием двери убедиться, что винт остановлен Выход в переднюю часть самолета	Main door, internal side
Emergency exit label	EMERGENCY EXIT АВАРИЙНЫЙ ВЫХОД	Emergency exit: internal and external side

EMERGENCY PROCEDURES

SMOKE AND FIRE OCCURRENCE

Use ventilation window in case of smoke in cabin for all cases.

FAILURE OF CONTROL SYSTEM

LOSS OF STABILATOR CONTROL

In case of loss of pilot side stabilator control (disconnected or jammed), apply following procedure:

1. Continue the flight at the speed of 80 - 85 KIAS due to the aircraft weight in cruise configuration.
2. Bank angle: not more than 30° during turning.
3. Control the aircraft with mechanical trim and engine power setting.

NOTE

The increase of thrust causes a nose up moment; the decrease of thrust causes a nose down moment. The control by trim operation is related to the trim position: trim UP for aircraft nose Up; trim DOWN for aircraft nose DOWN.

CAUTION

Perform approach and landing only in cruise configuration (Flap 0°).

It is necessary to move the landing gear in down position before starting the glide and to balance the aircraft with trim and thrust.

It is possible to correct the glide path by trim operation to minimize the thrust engines changes.

Only after touchdown it is possible to move the engine controls in idle position.

Land as soon as possible.

Loss of Aileron Control

In case of loss of pilot side aileron control (disconnected or jammed), apply following procedure:

1. Continue flight at the speed of 80 - 85 KIAS due to the aircraft weight in cruise configuration.
2. Control the airplane bank angle by means of the rudder.
3. Bank angle: not more than 30° during turning.
4. **Land as soon as practical.**

CAUTION

Perform approach and landing only in cruise configuration (Flap 0°).

Perform approach and landing with crosswind trend type landing.

Loss of Rudder Control

In case of loss of pilot side rudder control (disconnected or jammed), apply following procedure.

1. Continue flight at the speed of 80 - 85 KIAS due to the aircraft weight in cruise configuration.
2. Control airplane bank angle by means of ailerons.
3. Bank angle: not more than 30° during turning.
4. **Land as soon as practical.**

CAUTION

Perform approach and landing only in cruise configuration (Flap 0°).

Perform approach and landing with crosswind trend type landing.

ONE ENGINE INOPERATIVE PROCEDURES

NOTE

The ineffectiveness of one engine results in an asymmetric traction condition which tends to yaw and to bank the aircraft. In this condition it is essential to maintain the direction of flight compensating the lower traction through the operating engine and counteracting the yawing effects through the use of pedals and rudder trim. To improve the efficiency, it is preferred to bank the aircraft to the side of the operating engine by about 5°.

Depending upon the circumstances that may arise, apply the emergency procedure as below.

CHARACTERISTIC AIRSPEEDS WITH ONE ENGINE INOPERATIVE

In case of one engine inoperative condition, pilot shall take into account the airspeeds shown below:

Conditions	Speed (KIAS)
Minimum aircraft control speed with one engine inoperative and flaps set to T.O. (V_{MC})	62
Best rate-of-climb speed with flaps set to T.O. (V_Y)	70
Best rate-of-climb speed with one engine inoperative with flaps set to 0° (V_{YSE})	80 (1180kg) 78 (1080kg) 75 (980kg)

NOTE

Perform approach and landing only with flap set at 0°.

INFLIGHT ENGINE RESTART

NOTE *It is preferred to restart the engine at an altitude below 4000ft and at the suggested speed of 80 KIAS or more*

1.	Carburettor heat	*ON if required*
2.	Electrical fuel pump	*ON*
3.	Fuel quantity indicator	*CHECK*
4.	Fuel Selector	*CHECK (Crossfeed if required)*
5.	FIELD	*OFF*
6.	Ignition	*BOTH ON*
7.	Operating engine Throttle Lever	*IDLE (only if practical)*
8.	Stopped engine Throttle Lever	*IDLE*
9.	Stopped engine Propeller Lever	*FULL FORWARD*
10.	Start push-button	*PUSH*
11.	Propeller Lever	*SET at desired rpm*
12.	FIELD	*ON*
13.	Engine throttle levers	*SET as required*

NOTE *If the fuel quantity in the tank which feeds the stopped engine is low, select the opposite side fuel tank by means of the fuel selector.*

NOTE *After starter engagement during in-flight engine restart, PFD indication may be temporarily lost. PFD Attitude recovery can last up to 3-4 minutes. During attitude recovery it is necessary to maintain level straight-line flight.*

In case of unsuccessful engine restart:

1. SECURE engine (see *engine securing procedure* on Para. 5)
2. **Land as soon as practical** applying *one engine inoperative landing* procedure. See Para. 8.6

In case of successful engine restart:

1. **Land as soon as practical**

CAUTION *After engine restart, if practical, moderate propeller rpm to allow the temperatures for stabilizing in the green arcs.*

LANDING EMERGENCIES

LANDING WITHOUT ENGINE POWER

Landing on the Airfield

CAUTION

Both engines failure condition requires both propellers feathered and aircraft attitude set to maximum efficiency until the selection of the field, on which to perform an emergency landing, is made.

1.	Airspeed (VY+4kts)	84 KIAS (1180kg) *82* KIAS (1080kg) 79 KIAS (980kg)
2.	Flaps	*Only 0°*
3.	Landing gear control lever	*DOWN*

CAUTION

To shorten the landing gear extension time, evaluate the possibility to use the emergency extension control. In this way the time required to complete the extension is shorter by about 8 sec.

4.	Select landing field (check for obstacles and wind)	
5.	Safety belts	*FASTEN*

Before touch down

6.	Fuel Selector	*BOTH OFF*
7.	Electrical fuel pump	*BOTH OFF*
8.	Ignitions	*ALL OFF*
9.	MASTER SWITCHES	*ALL OFF*

WARNING

Emergency Landing outside of airfield shall be performed with landing gear retracted and starting flaps extension in FULL configuration at 50 ft of altitude. To reach the maximum gliding distance at the optimal airspeed above mentioned, and to reduce the loss of altitude during a 180° turn, turn with 30° bank angle.

NOTE

The distance covered in correspondence of the optimal speed V_Y is about 4000 meters by 1000ft of altitude.

NOTE

The loss of altitude, when a 180° turn is performed with bank angle of 30°, is about 200ft in correspondence of V_Y.

NORMAL OPERATIONS

COLD WEATHER OPERATIONS

If the aircraft is operated in cold weather conditions (from -25ºC till -5ºC) it is necessary to perform following procedures:

- Heat the cabin to +25ºC to avoid windshield frost in flight
- Heat the engines with external source to + 20º C
- Check the pressure in hydraulic system, recharge if necessary

AIRSPEEDS FOR NORMAL OPERATIONS

The following airspeeds are those which are significant for normal operations.

	FLAPS	**1180kg (2600lb)**
Rotation Speed (in takeoff, V_R)	T/O	**64 KIAS**
Speed over a 15 meters obstacle (V_{obs}) Take Off	T/O	**70 KIAS**
Best Angle-of-Climb Speed (V_X)	0°	**80 KIAS**
Best Rate-of-Climb speed (V_Y)	0°	**80 KIAS**
Approach speed	T/O	**90 KIAS**
Speed over a 15 meters obstacle (V_{obs}) Landing	T/O	**70 KIAS**
Final Approach Speed	FULL	**70 KIAS**
Manoeuvring speed (V_A)	0°	**118 KIAS**
Never Exceed Speed (V_{NE})	0°	**167 KIAS**

For training purposes, keep speed above following reference data before setting one engine to *zero* thrust condition (i.e. propeller lever full forward and throttle lever set at 15 mmHg MAP):

Safe single engine speed with flaps T/O (V_{SSE})	**70 KIAS**
Safe single engine speed with flaps 0° (V_{SSE})	**80 KIAS (1180kg)** **78 KIAS (1080kg)** **75 KIAS (980kg)**

AIRCRAFT WALK-AROUND

In addition to the aircraft walk-around checklist reported on basic AFM, Section 4, perform following checks:

Left and right wing leading edge	*Check stall strip.*

COCKPIT INSPECTIONS

NOTE

Make sure that passengers are familiar with the safety belts and emergency exits employment and that they do not smoke on board. Passengers boarding, paying attention to the propeller disc, is under the pilot's responsibility.

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 and set altitude displaying in meters (see G950 Pilot's Guide)*
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 ON*
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, verifying extension. Then retract flaps.*
29	Pitch trim control	*Set to neutral position.*
30	Rudder trim control	*Set to neutral position.*

TAKEOFF AND CLIMB

1	Call TWR for takeoff	
2	Check for clear final and wind on runway	*Direction and intensity*
3	LH and RH Electrical Fuel pump	*BOTH ON*
5	Carburettors heat	*CHECK OFF*
8	LH and RH Propeller Lever	*FULL FORWARD*
9	LH and RH Throttle Lever	*FULL THROTTLE (about 2400 ± 100 propeller rpm)*
10	Engines instruments	*Parameters within green arcs*
11	Rotation speed	*Vr = 64 KIAS*
12	Rotation and takeoff	
13	Apply slightly brakes to stop wheel spinning	
14	Landing gear control knob	*UP: check green lights and TRANS light turned OFF*
15	Speed over obstacle	*70KIAS*
16	Flaps	*0° at 300 ft (AGL)*
21	Landing and taxi lights	*OFF*
17	Establish climb rate	*Above 80 KIAS*
18	Trim adjustment	
19	LH and RH Propeller Lever	*Set at 2250 rpm (*after reaching safe altitude*)*
20	LH and RH Electrical Fuel pump	*BOTH OFF*

CRUISE

Flights in the CIS airspace are allowed only along the routes with continuous ATC monitoring using RBS mode in VHF covering zones.

1	Reach cruise altitude	
2	Set throttle and rpm as required for the cruise	
3	LH and RH Propeller Lever	*SET to 1900-2400 rpm*
4	Trim	*As required*
5	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 (0.15 - 0.40 bar)*

6 Carburettor heat as needed *(see also instructions addressed on Section 3)*

BALKED LANDING

1	LH and RH Throttle Lever	*FULL THROTTLE*
2	LH and RH Propeller Lever	*FULL FORWARD*
3	Speed	*Over 70 KIAS*
4	Flaps	*T/O*
5	Landing gear	*UP*
6	Carburettor heat	*CHECK OFF*
7	LH and RH Electrical Fuel pump	*CHECK ON*

PERFORMANCES

TAKEOFF PERFORMANCES

Takeoff ground roll

CONDITIONS:

- Flaps: T/O
- Throttle levers: FULL FORWARD
- Runway: paved

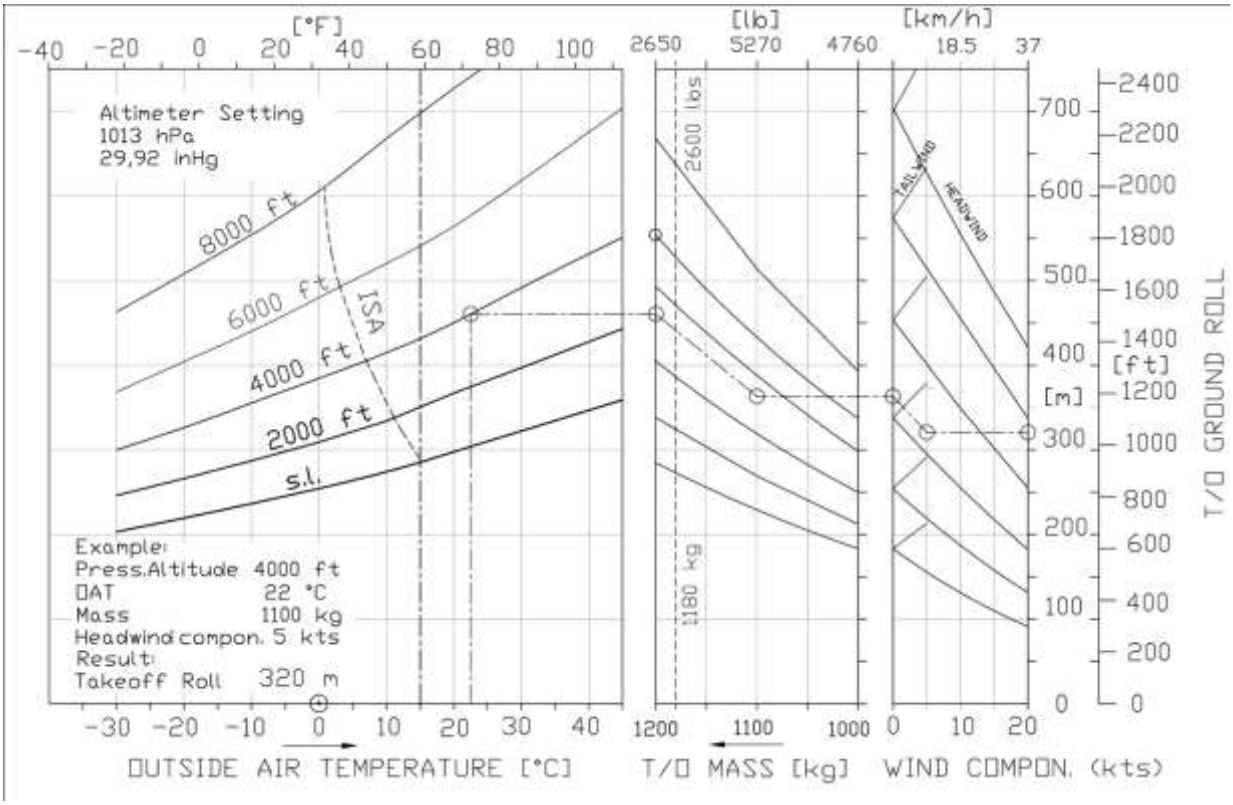


Figure 1 - Takeoff ground roll

NOTE

In case of headwind, the takeoff run decreases by 2.5m for each knot of wind (8 ft/kt).

In case of tailwind, the takeoff run increases by 10m for each knot of wind (33 ft/kt).

Measurement distances for short grass (less than 2 inches) must be increased of 10%
Measurement distances for high grass (more than 2 inches) must be increased of 15%

A rising runway with a gradient of 1% causes an acceleration decreasing of the same intensity and, consequently, the takeoff run increases by 5%.

Takeoff distance

CONDITIONS:

- Flaps: T/O
- Throttle levers: FULL FORWARD
- Runway: paved

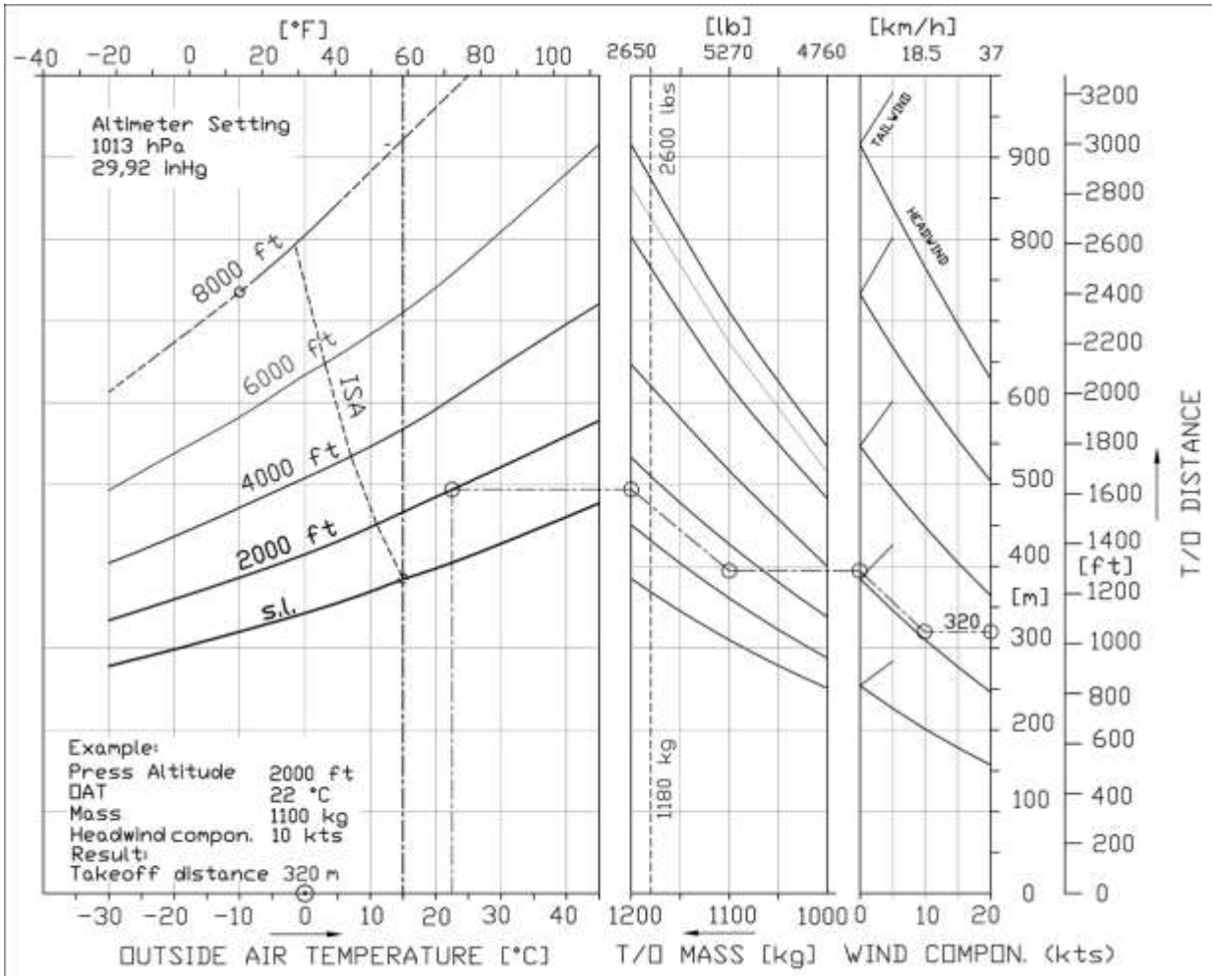


Figure 2 - Takeoff distance (50 ft. Obs)

NOTE

In case of headwind, the takeoff run decreases by 4m for each knot of wind (13 ft/kt).

In case of tailwind, the takeoff run increases by 14m for each knot of wind (40 ft/kt).

Take off roll measurement distances for short grass (less than 2 inches) must be increased of 10%
Take off roll measurement distances for high grass (more than 2 inches) must be increased of 15%

A rising runway with a gradient of 1% causes a takeoff run increasing by about 4%.

CLIMB PERFORMANCE (ONE ENGINE INOPERATIVE)

CONDITIONS:

- AC Clean configuration
- One engine inoperative
- Max Cont. Power – Airspeed:

Weight [kg]	V_{SSE} [KIAS]
1180	80
1080	78
980	75

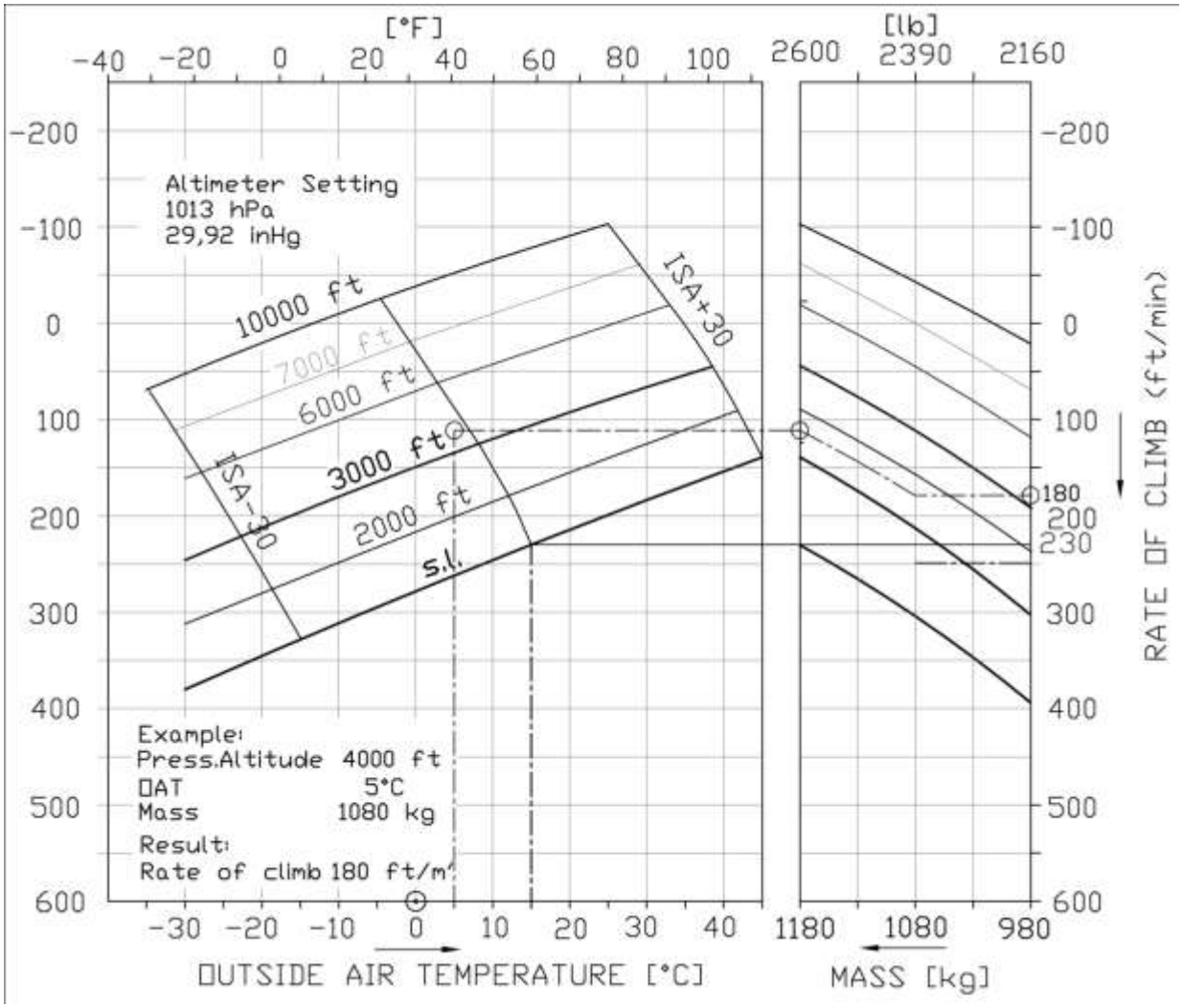


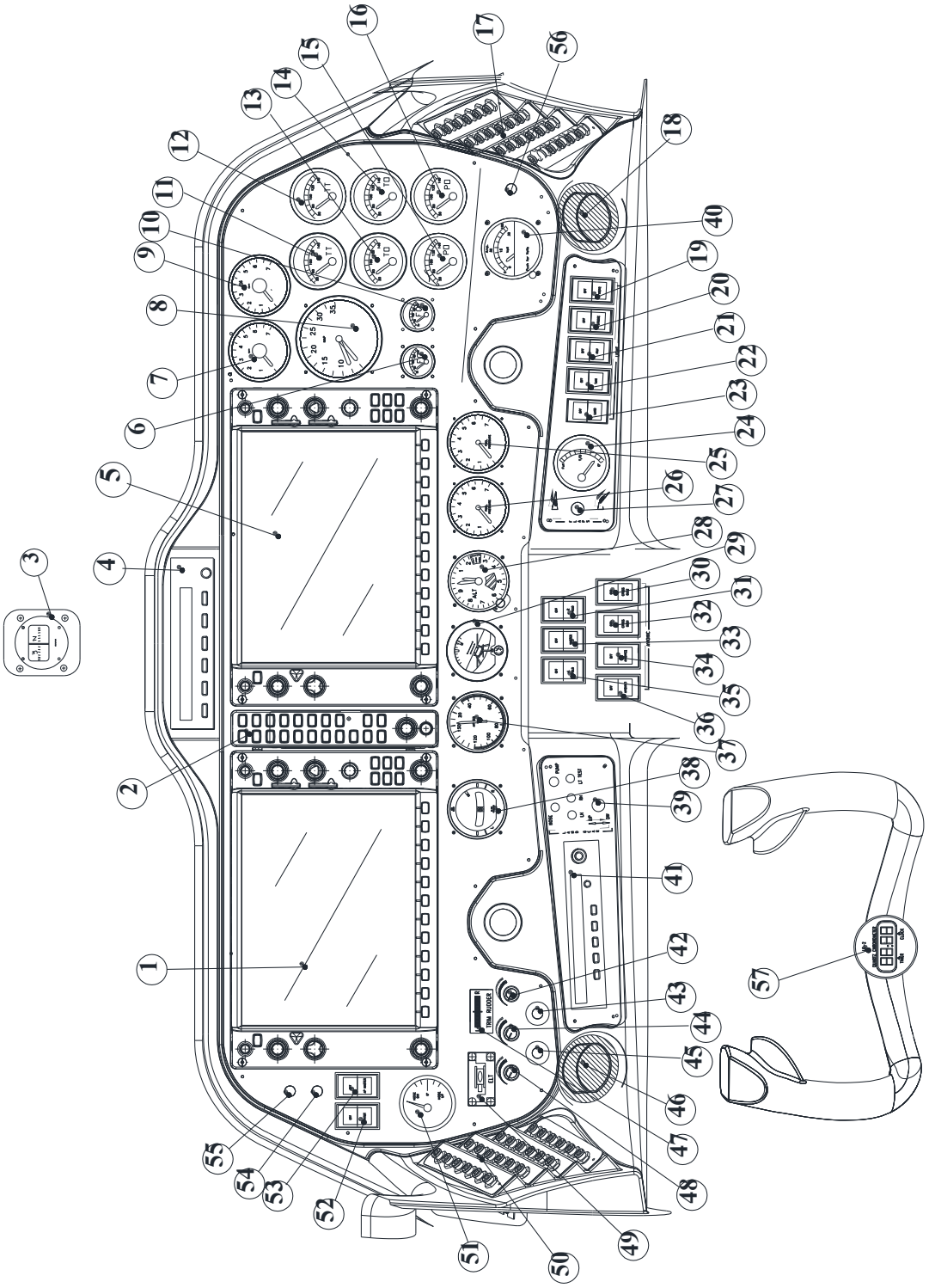
Figure 3 – Rate of Climb (one engine inoperative)

WEIGHT AND BALANCE

For weight and balance, make reference to Section 6 of this Manual.

SYSTEMS

INSTRUMENTS PANEL



Instruments panel (typical layout)

Item	Description
1	GDU 1040 (PFD)
2	GMA 1347
3	Compass
4	A/P Programmer/Computer
5	GDU 1040 (MFD)
6	LH fuel quantity indicator
7	LH R.P.M.
8	Dual M.A.P. indicator
9	RH R.P.M.
10	RH fuel quantity indicator
11	LH CHT
12	RH CHT
13	LH Oil Temperature
14	RH Oil Temperature
15	LH oil pressure
16	RH oil pressure
17	RH breakers panel
18	RH ram air inlet
19	Instruments light switch
20	Strobe light switch
21	Navigation light switch
22	Taxi light switch
23	Landing light switch
24	Position flaps indicator
25	RH fuel pressure
26	LH fuel pressure
27	Flap switch
28	Standby Altimeter
29	Standby Attitude indicator

Item	Description
30	RH Cross bus switch
31	RH Field
32	LH Cross bus switch
33	Master switch
34	RH Avionic switch
35	LH Field
36	LH Avionic switch
37	Standby Airspeed indicator
38	Side slip indicator
39	LG control knob
40	Voltammeter Indicator
41	ADF control panel
42	Cockpit light dimmer
43	Cabin heat (warm air from RH engine)
44	Avionics lights dimmer
45	Cabin heat (warm air from LH engine)
46	LH ram air inlet
47	Trim rudder indicator
48	Switches built-in lights dimmer
49	ELT Indicator
50	RH breakers panel
51	Pitch trim indicator
52	Pitot heat switch
53	A/P Master switch
54	A/P trim master switch
55	Fire Detector push-to-test
56	LH/RH Ammeter selector switch
57	Chronometer

SUPPLEMENT NO. G8

BRAZILIAN AIRCRAFT FLIGHT MANUAL SUPPLEMENT

(EASA APPROVED)

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
			DO	OoA	HDO	
0	-	See Note (*)				

Note (*): this Supplement has been originally issued on 4 March 2011, after EASA Third Country Validation process completion.

List of Effective Pages

Page	Revision	Page	Revision
G8-1	Rev 0	**G8-6**	Rev 0
G8-2	Rev 0	**G8-7**	Rev 0
G8-3	Rev 0	**G8-8**	Rev 0
G8-4	Rev 0	**G8-9**	Rev 0
G8-5	Rev 0	**G8-10**	Rev 0

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GPS operation (for airplanes without autopilot installed) 7
WAAS and SBAS functionalities: 7
Placards in portuguese 8

INTRODUCTION

This supplement applies for Brazilian registered aircraft.

GENERAL

Information contained herein complements the basic information in the EASA Approved Aircraft Flight Manual when the aircraft is registered in Brazil.

For limitations, procedures, and performance information not contained in this Supplement, refer to the basic Aircraft Flight Manual.

LIMITATIONS

APPROVED FUEL

APPROVED FUEL: AVGAS 100 LL (ASTM D910)

CAUTION

Use of automotive gasoline (MOGAS) is not allowed for operation in Brazil.

CAUTION

Use of Aviation Fuel Avgas 100LL results in greater wear of valve seats and greater combustion deposits inside cylinders due to higher lead content. Make reference to Rotax Maintenance Manual who provides dedicated checks due to the prolonged use of Avgas.

VHF/COMM SYSTEM

When operating the VHF/COMM system in Brazilian air space, the selection of the channel spacing of 8.33 kHz can cause the loss of communication with the Air Traffic Control (ATC).

GPS SYSTEMS

GPS OPERATION (FOR AIRPLANES WITH AUTOPILOT INSTALLED)

- Use of GPS for precision approach navigation mode is not allowed.

- Use of GPS is prohibited as primary means for navigation. GPS is approved as supplemental means for navigation;

- Navigation using of the GPS system as the source of information is limited to IFR en route, terminal area and non-precision approach mode;

- During IFR in terminal area or non-precision approach using GPS, autopilot or flight director must be coupled to GPS.

- If RAIM function becomes unavailable in “en route” phase of flight, position must be verified every 15 minutes using other IFR approved navigation system;

- During IFR in terminal area or non-precision approach using GPS, in case RAIM function becomes unavailable, the GPS navigation must be discontinued;

- Before an IFR non-precision approach using GPS, the availability of the RAIM function must be checked to the time and place predicted (RAIM prediction). If predicted the unavailability of the RAIM function, navigation must be planned with others approved navigation systems;

- Before a non-precision approach using GPS, the database information must be compared with that in the approach chart, including transitions, position and altitude of waypoints;

- IFR non-precision approach using GPS must be based on the approved procedures of the equipment database. It cannot be done based on data manually included.

GPS OPERATION (FOR AIRPLANES WITHOUT AUTOPILOT INSTALLED)

- Use of GPS for precision approach navigation mode is not allowed.

- Use of GPS is prohibited as primary means for navigation. GPS is approved as supplemental means for navigation;

- Use of GPS is prohibited for IFR in terminal area or in non-precision approach operations;

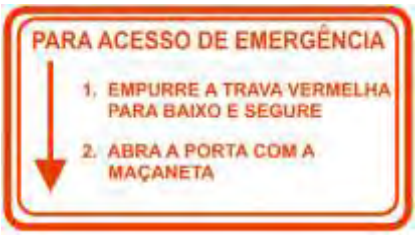
- If RAIM function becomes unavailable in en route phase of flight, position must be verified every 15 minutes using other IFR approved navigation system.

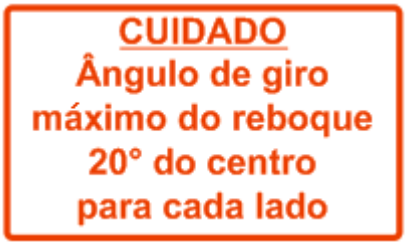
WAAS AND SBAS FUNCTIONALITIES:

The WAAS and SBAS functionalities are not available in Brazil and these functions are not tested or approved in Brazilian air space.

PLACARDS IN PORTUGUESE

Description	Placard	Place
Smoking ban		Instruments panel, right side
Engine oil level and specifications		On the engine nacelle, in correspondence of the engine oil reservoir access door
Fuel type and quantity		In correspondence of each fuel tank filler cap.
Baggage compartment capacity		Baggage compartment (vertical panel)

Description	Placard	Place
Ditching emergency exit: opening instructions		Ditching emergency exit handle: external side
Ditching emergency exit: opening instructions		Ditching emergency exit handle: internal side
Door locking system: bypass instructions		Main door and emergency exit: external side
Door locking system: bypass instructions		Main door and emergency exit: internal side

Description	Placard	Place
Main door: exit instructions		Main door, internal side
Emergency exit label		Emergency exit: internal and external side
Towing maximum turning angle		Nose landing gear front door

SUPPLEMENT NO. G9

CHINESE AIRCRAFT FLIGHT MANUAL SUPPLEMENT

(EASA APPROVED)

Record of Revisions

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval or Under DOA Privileges
			DO	OoA	HDO	
0	-	First issue	P. Violetti	M. Oliva	L. Pascale	Third Country Validation

List of Effective Pages

Page	Revision	Page	Revision
G9-1	Rev 0	**G9-7**	Rev 0
G9-2	Rev 0	**G9-8**	Rev 0
G9-3	Rev 0	**G9-9**	Rev 0
G9-4	Rev 0	**G9-10**	Rev 0
G9-5	Rev 0	**G9-11**	Rev 0
G9-6	Rev 0	**G9-12**	Rev 0

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NORMAL OPERATIONS 10
Cold weather operations 10

INTRODUCTION

This supplement applies for Chinese registered aircraft.

GENERAL

Information contained herein complements the basic information in the EASA Approved Aircraft Flight Manual when the aircraft is registered in China.

For limitations, procedures, and performance information not contained in this Supplement, refer to the basic Aircraft Flight Manual.

LIMITATIONS

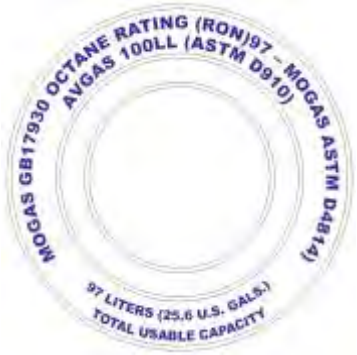
APPROVED FUEL

- MOGAS compliant with PRC National Standard GB17930-2006 - Octane Rating (RON) 97
- MOGAS ASTM D4814
- MOGAS EN 228 Super/Super plus (min. RON 95)
- AVGAS 100 LL (ASTM D910)

CAUTION

Prolonged use of Aviation Fuel Avgas 100LL results in greater wear of valve seats and greater combustion deposits inside cylinders due to higher lead content. It is therefore suggested to avoid using this type of fuel unless strictly necessary. Make reference to Rotax Maintenance Manual who provides dedicated checks due to the prolonged use of Avgas.

PLACARDS IN CHINESE

Description/Place	Placard	Chinese
Smoking ban. Instruments panel, right side		禁止吸烟
Engine oil level and specifications. On the engine nacelle, in correspondence of the engine oil reservoir access door		滑油箱 检查油位 滑油油位 最大 3Lt OK 最低 2Lt 滑油油位超出限制时，禁止飞行。 只允许使用API规定的或更高级别的滑油。
Fuel type and quantity. In correspondence of each fuel tank filler cap.		GB17930 97号车用汽油–ASTM D4814车用汽油 航空汽油 100LL（ASTM D910） 97升（25.6 U.S. 加仑） 合计可用容量
Baggage compartment capacity. Baggage compartment (vertical panel)		最大行李载荷 80kg/176磅 最大规定压强 0.9 kg/dm2-19lbs/sqft 飞行前用行李网固定行李。

Description/Place	Placard	Chinese
Ditching emergency exit: opening instructions. Ditching emergency exit handle: internal side		水上迫降应急出口 1、旋转。 2、平稳向外推。
Ditching emergency exit: opening instructions. Ditching emergency exit handle: external side		水上迫降应急出口 1、旋转。 2、平稳向内拉。
Door locking system: by-pass instructions. Main door and emergency exit: external side		应急通道 1、按住红色扭。 2、用把手打开门。
Door locking system: by-pass instructions. Main door and emergency exit: internal side		应急出口 1、按住红色扭。 2、用把手打开门。

Description/Place	Placard	Chinese
Main door: exit instructions. Main door, internal side		警告 打开门，向飞机前方撤离前，确认螺旋桨已经停止转动。
Emergency exit label. Emergency exit: internal and external side		应急出口
Maximum steering angle. Front of the aircraft.		注意 牵引最大转弯角度：中立两侧20度。

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NORMAL OPERATIONS

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.

Preflight

WARNING

Flight in expected and/or known icing conditions is forbidden.

An external inspection of the aircraft is performed before each flight, as prescribed on Section 4. 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 takeoff because they will seriously affect airplane performance. Aircraft with ice/snow accumulation are forbidden to 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 (at temperature more then -5ºC).
- Let airplane temperature stabilize.
- Heat the cabin at a suitable value for crew comfort: an electrical fan heater can be used inside the cabin.
- Tow airplane outside and perform engine starting.

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SUPPLEMENT NO. G10 – INCREASED MTOW (1230 KG)

RECORD OF REVISIONS

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval Or Under DOA Privileges
			DO	OoA	HDO	
0	--	New Edition	D. Ronca	C. Caruso	M. Oliva	-
1	SW5-16	Amend of Cruise performances table	D. Ronca	C. Caruso	M. Oliva	Approved under the authority of DOA, ref. EASA.21J.335 (MOD2006/290.170316)

LOEP

	Page	Revision
Cover pages	G10-1 thru 2	Rev 1
	G10-3 thru 12	Rev 0
Section 2	SW2- 5	Rev 0
	SW2-6	Rev 0
	SW2-7	Rev 0
	SW2-8	Rev 0
	SW2-15	Rev 0
	SW2-16	Rev 0
	SW2-21	Rev 0
	SW2-22	Rev 0
Section 5	SW5-1	Rev 0
	SW5-2 thru 4	Rev 0
	SW5-5	Rev 0
	SW5-6	Rev 0
	SW5-7 thru 9	Rev 0
	SW5-10 thru 15	Rev 0
	SW5-16	Rev 1
	SW5-17 thru 22	Rev 0

INTRODUCTION

This Supplement applies to aircraft equipped with Garmin G950 Integrated Flight Deck System (Design Change MOD 2006/002).

It contains supplemental information to perform Increased Maximum Takeoff Weight (1230 kg) operations when the Tecnam Service Bulletin SB 077-CS or Design Change MOD 2006/015 has been embodied on the airplane.

The information contained herein supplements or supersedes the basic Aircraft Flight Manual or the Supplement G1, as applicable: detailed instructions are provided to allow the owner for replacing the Basic AFM/Supplement G1 pages containing information amended as per the Increased MTOW Design Change in subject.

It is the owner's responsibility to replace the mentioned pages in accordance with the instructions herein addressed section by section.

IMPORTANT

The owner has to apply the instructions reported on Supplement G1, then those herein reported.

Supplement G10: pages replacement instructions

SECTION 1 - GENERAL

See Section 1 of the Basic Manual

Supplement G10: pages replacement instructions

SECTION 2 - LIMITATIONS

Make sure you first applied instructions reported on Supplement G1, Section 2 Limitations

Apply following pages replacement procedure:

Supplement G10 – LIMITATIONS page		Supplement G1 Section 2 page
SW2-5	**REPLACES**	Page 2-5 of Basic AFM, Section 2
SW2-6	**REPLACES**	Page 2-6 of Basic AFM, Section 2
SW2-7	**REPLACES**	Page S2-7 of Supplement G1, Section 2
SW2-8	**REPLACES**	Page S2-8 of Supplement G1, Section 2
SW2-15	**REPLACES**	Page 2-15 of Basic AFM, Section 2
SW2-16	**REPLACES**	Page 2-16 of Basic AFM, Section 2
SW2-21	**REPLACES**	Page S2-21 of Supplement G1, Section 2
SW2-22	**REPLACES**	Page S2-22 of Supplement G1, Section 2

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2 SPEED LIMITATIONS

The following table addresses the airspeed limitations and their operational significance:

SPEED			KIAS	KCAS	REMARKS
V_{NE}	Never exceed speed		171	172	Do not exceed this speed in any operation.
V_{NO}	Maximum Structural Cruising Speed		138	136	Do not exceed this speed except in smooth air, and only with caution.
V_A	Design Manoeuvring speed		122	119	Do not make full or abrupt control movement above this speed, because under certain conditions the aircraft may be overstressed by full control movement.
V_O	Operating Manoeuvring speed				
V_{LE}	Maximum Landing Gear extended speed		93	93	Do not exceed this speed with the landing gear extended.
V_{LO}	Maximum Landing Gear operating speed		93	93	Do not exceed this speed when operating the landing gear.
V_{FE}	Maximum flaps extended speed	***FULL***	93	93	Do not exceed this speed for indicated flaps setting.
		T.O.	122	119	
V_{MC}	Aircraft minimum control speed with one engine inoperative		62	62	Do not reduce speed below this value in event of one engine inoperative condition.

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3 AIRSPEED INDICATOR MARKINGS

Airspeed indicator markings and their colour code are explained in the following table.

MARKING	KIAS	EXPLANATION
White band	**54-93**	Lower limit is V_{SO}, upper limit is the maximum allowable speed with flaps extended in *FULL* position.
Red line	**62**	Minimum aircraft control speed with one engine inoperative and flaps set to T.O.
Green band	**66-138**	Normal aircraft operating range (lower limit is V_{S1}, stall speed in "clean" configuration, and upper limit is the maximum structural cruise speed V_{NO}).
Blue line	**84**	Best rate-of-climb speed with one engine inoperative at sea level.
Yellow band	**138-171**	Speed range where manoeuvres must be conducted with caution and only in smooth air.
Red line	**171**	Maximum speed for all operations.

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14 WEIGHTS

Condition	Weight	
Maximum takeoff weight	1230 kg	2712 lb
Maximum landing weight	1230 kg	2712 lb
Maximum zero wing fuel weight	1195 kg	2635 lb

NOTE *Refer to Para. 21.4 of this AFM Section for baggage loading limitations.*

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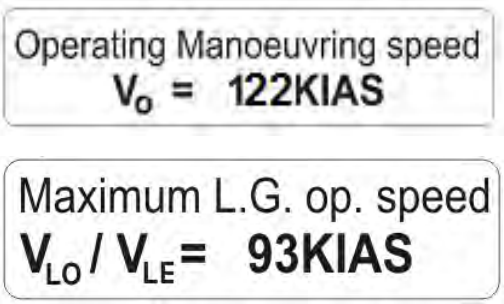
21. LIMITATIONS PLACARDS

Hereinafter the placards, related to the operating limitations and installed on ***P2006T***, are reported.

21.1. SPEED LIMITATIONS

On the left side instrument panel, the following placards reporting the speed limitations are placed:



Speed limitations placard for MTOW @1230 kg (2712 lb)

21.2. OPERATING LIMITATIONS

On the instrument panel, it is placed the following placard reminding the observance of aircraft operating limitations; make reference to Para. 22 for the list of equipment required on board to allow flight operations in VFR Day, VFR Night, IFR Day and IFR Night conditions.

This A/C can be operated only in normal category DAY-NIGHT-VFR-IFR (with required equipment) in non-icing conditions. All aerobatics manoeuvres including spinning are prohibited. For operational limitations refer to FLIGHT MANUAL

Supplement G10: pages replacement instructions

EMERGENCY PROCEDURES

Apply following instruction:

Section 3 - EMERGENCY PROCEDURES pages as per Supplement G1 Instructions are still valid

NOTE

Because of MTOW increase, the best rate-of-climb speed with one engine inoperative (V_{YSE}) is 84 KIAS. Refer to "Characteristic airspeeds with one engine inoperative" table reported on basic AFM Section 3.

Supplement G10: pages replacement instructions

NORMAL PROCEDURES

Apply following instruction:

Section 4 - NORMAL PROCEDURES pages as per Supplement G1 instructions are still valid

Supplement G10: pages replacement instructions

PERFORMANCES

Apply following instruction:

Supplement G10 – PERFORMANCES pages replace basic AFM Section 5 as a whole.

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SECTION 5 - PERFORMANCES

INDEX

1. Introduction 2
2. Use of performances charts 2
3. Airspeed indicator system calibration 3
4. ICAO Standard Atmosphere 4
5. Stall speed 5
6. Crosswind 6
7. Takeoff performances 7
8. Take-off Rate of Climb at V_y 10
9. Take-off Rate of Climb at V_x 11
10. Enroute Rate of Climb at V_y 12
11. Enroute Rate of Climb at V_x 13
12. One-Engine Rate of Climb at V_{ySE} 14
13. One-Engine Rate of Climb at V_{xSE} 15
14. Cruise performances 16
15. Landing performances 19
16. Balked landing climb gradient 22
17. Noise data 22

1. INTRODUCTION

This section provides all necessary data for an accurate and comprehensive planning of flight activity from takeoff to landing.

Data reported in graphs and/or in tables were determined using:

- "Flight Test Data" under conditions prescribed by EASA CS-23 regulation
- aircraft and engine in good condition
- average piloting techniques

Each graph or table was determined according to ICAO Standard Atmosphere (ISA - s.l.); evaluations of the impact on performances were carried out by theoretical means for:

* airspeed
* external temperature
* altitude
* weight
* runway type and condition

2. USE OF PERFORMANCES CHARTS

Performances data are presented in tabular or graphical form to illustrate the effect of different variables such as altitude, temperature and weight. Given information is sufficient to plan the mission with required precision and safety.

Additional information is provided for each table or graph.

3. AIRSPEED INDICATOR SYSTEM CALIBRATION

Graph shows calibrated airspeed V_{CAS} as a function of indicated airspeed V_{IAS}.

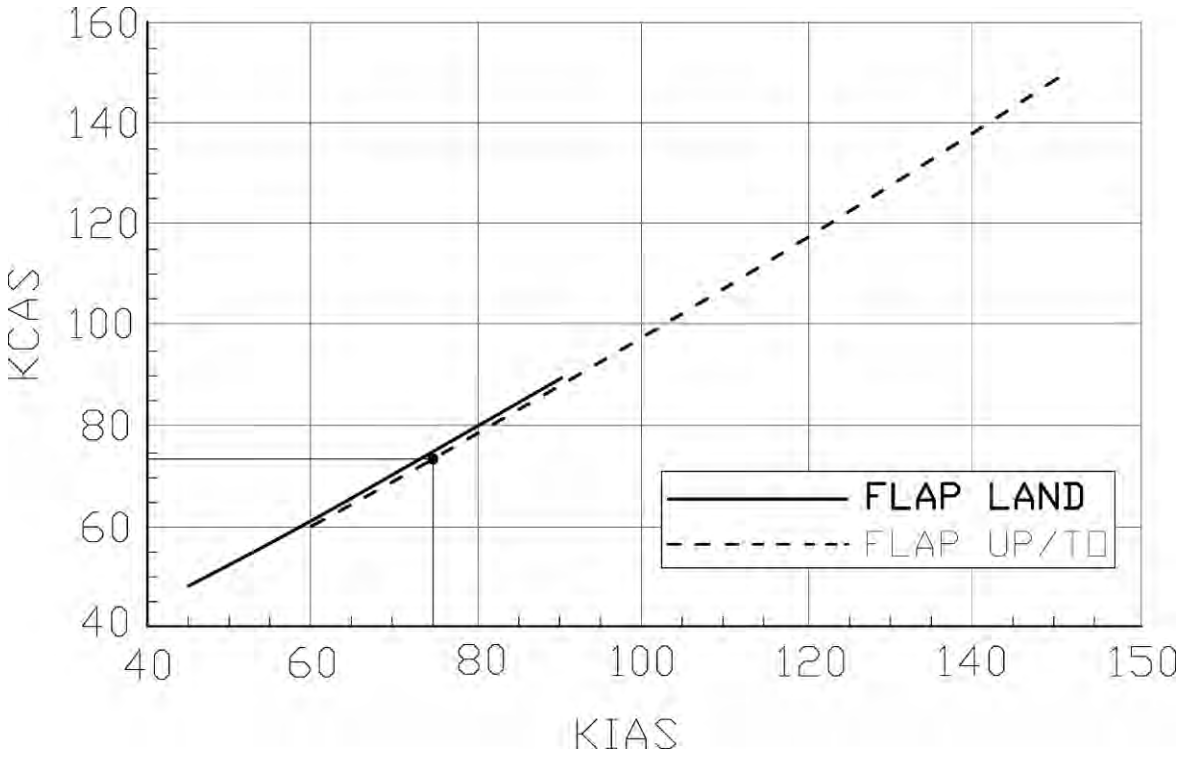

Figure 1 - IAS/CAS chart

Example:

Given	***Find***
KIAS *75*	KCAS *74*

4. ICAO STANDARD ATMOSPHERE

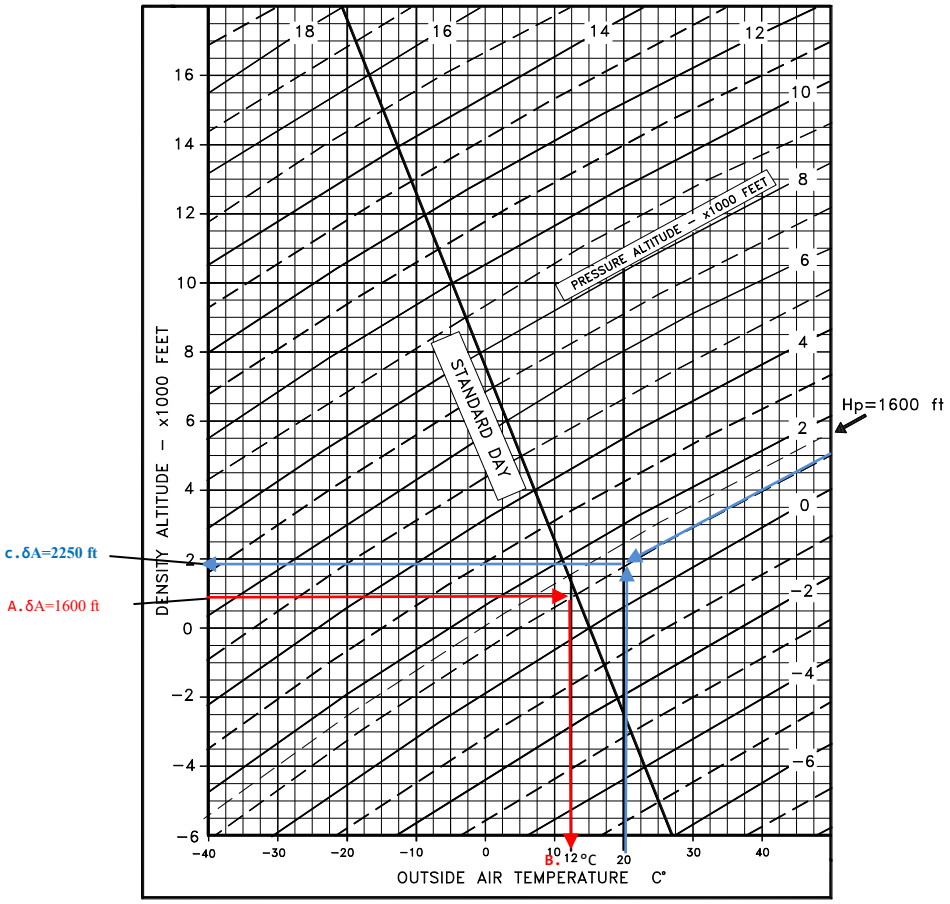

Figure 2 – ICAO chart

Examples:

Given

a. Temperature = 20°C

b. Pressure altitude = 1600’

Find

c. Corresponding Density Altitude = 2250’

Given

A. Pressure altitude = 1600’

ISA condition

Find

B. ISA Air Temperature = 12°C

5. STALL SPEED

Weight: *1230 kg (2712 lb)*
Throttle Levers: *IDLE*
Landing Gear: *Down*
CG: *Most Forward (16.5%)*
No ground effect

WEIGHT	BANK ANGLE	STALL SPEED					
		FLAPS 0°		FLAPS T/O		FLAPS FULL	
[kg]	*[deg]*	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
1230 *(FWD C.G.)*	0	66	65	59	57	54	55
	15	67	66	58	58	55	56
	30	71	70	61	61	59	59
	45	79	78	68	68	65	65
	60	95	93	83	81	79	78

NOTE

Altitude loss during conventional stall recovery, as demonstrated during flight tests is approximately 250 ft with banking below 30°.

6. CROSSWIND

Maximum demonstrated crosswind is 17 Kts

⇒ *Example:*

Given	***Find***
Wind direction (*with respect to aircraft longitudinal axis*) = 30°	Headwind = 17.5 Kts
Wind speed = 20 Kts	Crosswind = 10 Kts

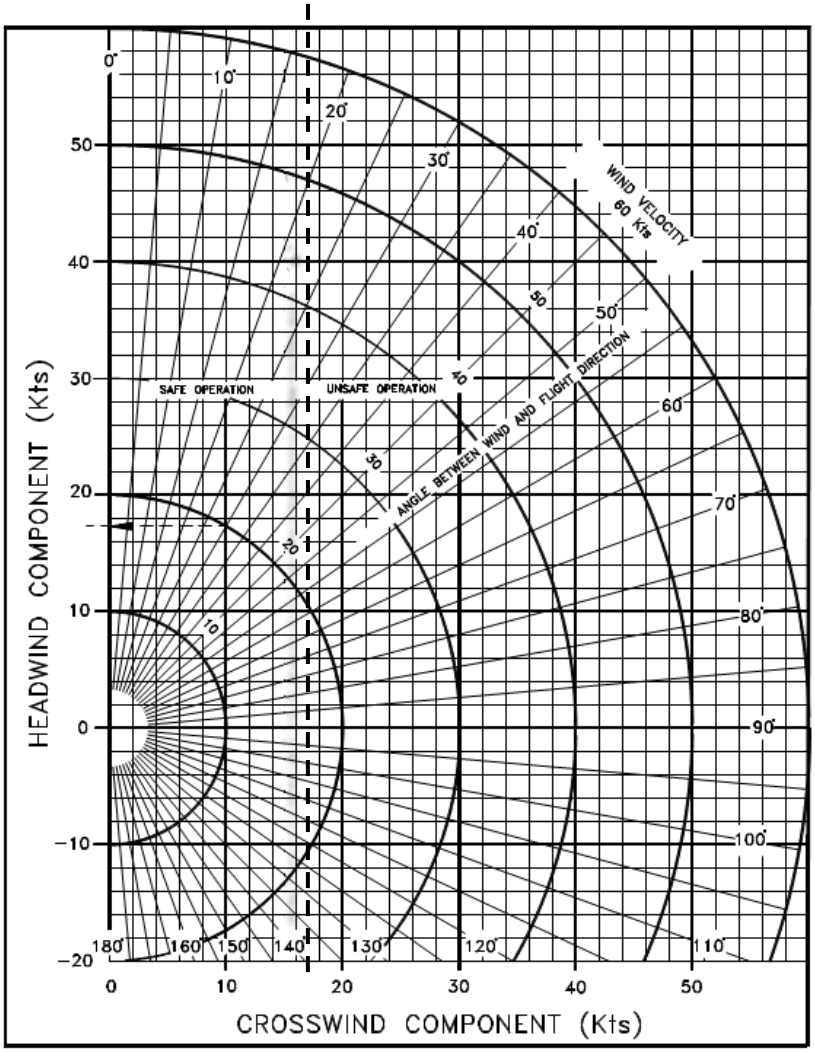

Figure 3 – Crosswind diagram

7. TAKEOFF PERFORMANCES

Weight = *1230 kg (2712 lb)*

Flaps: *T/O*
Speed at Lift-Off = *65 KIAS*
Speed Over *50ft* Obstacle = *70 KIAS*
Throttle Levers: *Full Forward*
Runway: *Grass*

Corrections

Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	207	263	328	401	**301**
	At 50 ft AGL	271	345	429	525	**394**
1000	Ground Roll	231	294	366	447	**330**
	At 50 ft AGL	303	385	479	586	**432**
2000	Ground Roll	258	328	409	500	**362**
	At 50 ft AGL	338	430	535	654	**474**
3000	Ground Roll	289	367	457	559	**398**
	At 50 ft AGL	378	480	598	731	**521**
4000	Ground Roll	323	411	511	625	**438**
	At 50 ft AGL	423	537	669	818	**573**
5000	Ground Roll	362	460	572	700	**481**
	At 50 ft AGL	473	602	749	916	**630**
6000	Ground Roll	405	515	642	785	**530**
	At 50 ft AGL	531	675	840	1027	**694**
7000	Ground Roll	455	578	720	880	**584**
	At 50 ft AGL	595	757	942	1152	**765**
8000	Ground Roll	511	650	809	989	**645**
	At 50 ft AGL	669	850	1059	1295	**844**
9000	Ground Roll	575	730	909	1112	**712**
	At 50 ft AGL	752	956	1190	1456	**932**
10000	Ground Roll	647	822	1023	1252	**786**
	At 50 ft AGL	847	1076	1340	1638	**1029**

Weight = *1080 kg (2381 lb)*

Flaps: *T/O*
Speed at Lift-Off = *65 KIAS*
Speed Over *50ft* Obstacle = *70 KIAS*
Throttle Levers: *Full Forward*
Runway: *Grass*

Corrections

Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	148	188	234	286	**215**
	At 50 ft AGL	193	246	306	374	**281**
1000	Ground Roll	165	210	261	319	**235**
	At 50 ft AGL	216	274	341	418	**308**
2000	Ground Roll	184	234	291	356	**258**
	At 50 ft AGL	241	306	381	466	**338**
3000	Ground Roll	206	262	326	398	**284**
	At 50 ft AGL	269	342	426	521	**372**
4000	Ground Roll	230	293	364	446	**312**
	At 50 ft AGL	301	383	477	583	**409**
5000	Ground Roll	258	328	408	499	**343**
	At 50 ft AGL	338	429	534	653	**449**
6000	Ground Roll	289	368	457	559	**378**
	At 50 ft AGL	378	481	599	732	**495**
7000	Ground Roll	324	412	513	628	**417**
	At 50 ft AGL	425	540	672	822	**545**
8000	Ground Roll	364	463	577	705	**460**
	At 50 ft AGL	477	606	755	923	**602**
9000	Ground Roll	410	521	648	793	**508**
	At 50 ft AGL	536	682	849	1038	**664**
10000	Ground Roll	461	586	730	893	**561**
	At 50 ft AGL	604	767	955	1168	**734**

Weight = *930 kg (2051 lb)*

Flaps: *T/O*
Speed at Lift-Off = *65 KIAS*
Speed Over *50ft* Obstacle = *70 KIAS*
Throttle Levers: *Full Forward*
Runway: *Grass*

Corrections

Headwind: - 2.5m for each kt (*8 ft/kt*)
Tailwind: + 10m for each kt (*33ft/kt*)
Paved Runway: - *6%* to Ground Roll
Runway slope: + 5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	100	127	158	194	**146**
	At 50 ft AGL	131	167	207	254	**190**
1000	Ground Roll	112	142	177	216	**160**
	At 50 ft AGL	146	186	231	283	**209**
2000	Ground Roll	125	159	197	242	**175**
	At 50 ft AGL	163	208	258	316	**229**
3000	Ground Roll	140	177	221	270	**192**
	At 50 ft AGL	183	232	289	353	**252**
4000	Ground Roll	156	198	247	302	**212**
	At 50 ft AGL	204	260	323	395	**277**
5000	Ground Roll	175	222	277	338	**233**
	At 50 ft AGL	229	291	362	443	**305**
6000	Ground Roll	196	249	310	379	**256**
	At 50 ft AGL	257	326	406	496	**335**
7000	Ground Roll	220	280	348	426	**282**
	At 50 ft AGL	288	366	455	557	**370**
8000	Ground Roll	247	314	391	478	**312**
	At 50 ft AGL	323	411	512	626	**408**
9000	Ground Roll	278	353	440	538	**344**
	At 50 ft AGL	364	462	575	704	**450**
10000	Ground Roll	313	397	495	605	**380**
	At 50 ft AGL	409	520	648	792	**498**

8. TAKE-OFF RATE OF CLIMB AT V_Y

Power Setting: Maximum Continuous Power
Flaps: Take-Off
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_Y	Rate of Climb [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	**S.L.**	**86**	1276	1088	920	768	**985**
	2000	**83**	1133	948	783	634	**873**
	4000	**79**	990	809	646	500	**761**
	6000	**76**	848	670	510	366	**649**
	8000	**73**	707	531	374	233	**537**
	10000	**70**	565	393	239	100	**425**
	12000	**67**	425	256	104	-32	**313**
	14000	**64**	285	118	-30	-164	**201**
1080	**S.L.**	**85**	1507	1302	1119	954	**1190**
	2000	**82**	1351	1150	970	808	**1068**
	4000	**79**	1196	998	822	662	**946**
	6000	**76**	1041	847	674	517	**825**
	8000	**73**	887	696	526	372	**703**
	10000	**69**	734	546	379	228	**581**
	12000	**66**	581	397	232	84	**459**
	14000	**63**	428	248	86	-59	**338**
930	**S.L.**	**85**	1803	1575	1372	1189	**1451**
	2000	**82**	1630	1406	1206	1026	**1315**
	4000	**79**	1457	1238	1041	864	**1180**
	6000	**75**	1286	1070	877	703	**1045**
	8000	**72**	1114	902	713	542	**909**
	10000	**69**	944	735	549	382	**774**
	12000	**65**	774	569	387	222	**639**
	14000	**62**	604	404	224	63	**503**

9. TAKE-OFF RATE OF CLIMB AT V_x

Power Setting: Maximum Continuous Power
Flaps: Take-Off
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_x	Rate of Climb at V_x [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	S.L.	78	1214	1037	880	738	941
	1000	76	1147	972	816	675	888
	2000	75	1080	906	751	612	836
	3000	74	1013	841	687	549	783
	4000	73	946	776	623	486	731
	5000	72	879	710	560	424	678
	6000	71	813	645	496	361	626
	7000	70	746	580	432	299	574
1080	S.L.	78	1283	1102	940	794	1002
	1000	76	1214	1034	874	729	949
	2000	75	1145	967	808	664	895
	3000	74	1076	900	742	600	841
	4000	73	1008	833	676	535	787
	5000	72	939	766	611	471	733
	6000	71	871	699	545	407	679
	7000	70	803	632	480	342	625
930	S.L.	78	1435	1243	1072	918	1138
	1000	76	1362	1172	1002	849	1081
	2000	75	1289	1101	932	780	1024
	3000	74	1216	1030	863	712	967
	4000	73	1144	958	793	644	910
	5000	72	1071	888	724	576	853
	6000	71	999	817	654	508	796
	7000	69	927	746	585	440	739

10. ENROUTE RATE OF CLIMB AT V_Y

Power Setting: Maximum Continuous Power
Flaps: Up
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_Y	Rate of Climb [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	S.L.	84	1317	1135	973	827	1036
	2000	83	1179	1000	841	697	928
	4000	81	1041	865	709	568	819
	6000	80	904	731	577	439	711
	8000	78	767	598	446	310	603
	10000	77	631	464	316	182	495
	12000	75	495	332	186	54	387
	14000	73	360	199	56	-73	279
1080	S.L.	83	1560	1360	1182	1022	1251
	2000	82	1408	1212	1037	879	1132
	4000	80	1257	1064	892	737	1014
	6000	78	1106	917	748	595	895
	8000	76	956	770	604	454	776
	10000	74	807	624	461	314	658
	12000	72	657	478	318	173	539
	14000	70	509	333	175	34	420
930	S.L.	82	1873	1649	1449	1269	1527
	2000	81	1703	1483	1286	1109	1393
	4000	79	1533	1317	1124	950	1260
	6000	77	1364	1151	962	791	1127
	8000	75	1196	987	800	632	994
	10000	73	1028	823	639	474	861
	12000	71	860	659	479	317	727
	14000	69	693	496	319	160	594

11. ENROUTE RATE OF CLIMB AT V_x

Power Setting: Maximum Continuous Power
Flaps: Up
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_x	Rate of Climb at V_x [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	S.L.	72	1241	1073	924	789	982
	1000	72	1177	1011	863	729	932
	2000	72	1114	949	802	669	882
	3000	72	1050	887	741	609	832
	4000	72	986	825	680	550	782
	5000	72	923	763	619	490	732
	6000	71	860	701	559	431	682
	7000	71	797	639	498	371	632
1080	S.L.	72	1480	1295	1130	981	1194
	1000	72	1410	1226	1062	915	1139
	2000	72	1340	1158	995	848	1084
	3000	72	1269	1089	928	782	1029
	4000	71	1199	1020	861	717	973
	5000	71	1129	952	794	651	918
	6000	71	1059	884	727	585	863
	7000	71	990	815	660	520	808
930	S.L.	72	1787	1578	1391	1223	1463
	1000	72	1707	1500	1315	1148	1401
	2000	71	1628	1422	1239	1074	1339
	3000	71	1549	1345	1163	999	1277
	4000	71	1470	1268	1087	925	1215
	5000	71	1391	1190	1012	851	1153
	6000	71	1312	1113	936	777	1090
	7000	70	1233	1036	861	703	1028

12. ONE-ENGINE RATE OF CLIMB AT V_{YSE}

Power Setting: Maximum Continuous Power (operative engine)
propeller feathered (inoperative engine)
Flaps: Up
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_{YSE}	Rate of Climb [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	S.L.	84	330	230	142	62	176
	1000	83	292	193	106	26	147
	2000	82	254	157	69	-9	117
	3000	81	216	120	33	-44	87
	4000	80	179	83	-3	-80	58
	5000	79	141	46	-38	-115	28
	6000	79	104	10	-74	-150	-1
	7000	78	67	-27	-110	-185	-31
1080	S.L.	80	436	330	235	149	271
	1000	80	396	290	196	111	240
	2000	79	355	251	157	73	208
	3000	79	315	211	118	35	176
	4000	79	275	172	80	-3	145
	5000	79	234	132	41	-41	113
	6000	78	194	93	3	-78	81
	7000	78	154	54	-35	-116	50
930	S.L.	79	574	455	349	253	390
	1000	79	529	411	305	211	355
	2000	79	483	367	262	168	319
	3000	78	438	322	219	126	284
	4000	78	393	278	176	83	248
	5000	78	348	235	133	41	213
	6000	78	304	191	90	-1	178
	7000	77	259	147	47	-43	142

13. ONE-ENGINE RATE OF CLIMB AT V_{xSE}

Power Setting: Maximum Continuous Power (operative engine)
propeller feathered (inoperative engine)
Flaps: Up
Landing Gear: Up

Weight	Pressure Altitude	Climb Speed V_{xSE}	Rate of Climb at V_{xSE} [ft/min]				
			Temperature [°C]				ISA
[kg]	[ft]	[KIAS]	-25	0	25	50	
1230	S.L.	83	325	227	140	61	174
	1000	82	288	191	104	26	145
	2000	81	251	155	69	-9	116
	3000	81	214	118	33	-44	86
	4000	80	177	82	-2	-78	57
	5000	79	140	46	-38	-113	28
	6000	78	103	10	-73	-148	-1
	7000	77	66	-26	-108	-183	-30
1080	S.L.	79	424	321	229	147	265
	1000	79	385	283	192	110	234
	2000	79	346	245	155	73	204
	3000	79	307	207	117	37	173
	4000	79	268	169	80	0	143
	5000	78	229	131	43	-36	112
	6000	78	190	93	6	-73	81
	7000	78	152	55	-31	-109	51
930	S.L.	78	556	442	341	249	380
	1000	78	513	400	299	209	346
	2000	78	469	358	258	168	312
	3000	78	426	316	217	128	279
	4000	78	383	274	176	87	245
	5000	78	340	232	134	47	211
	6000	77	298	190	93	7	177
	7000	77	255	148	52	-34	143

14. CRUISE PERFORMANCES

Weight: *1150 kg (2535 lb)*
Pressure Altitude: *0 ft*

RPM*	MAP [inHg]	ISA – 30°C (-15°C)			ISA (15°C)			ISA + 30°C (45°C)		
		PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]
2250	**29.5**	103%	143	28.6	97%	145	27.1	92%	146	25.8
2250	**28**	88%	134	24.5	83%	136	23.2	79%	138	22
2250	**26**	69%	122	19.2	65%	124	18.2	62%	125	17.3
2250	**24**	59%	115	16.6	56%	116	15.7	53%	117	14.9
2250	**22**	46%	103	12.8	43%	103	12.1	41%	103	11.5
2250	**20**	39%	96	11	37%	95	10.4	35%	94	9.9
2100	**28**	84%	132	23.5	80%	134	22.2	76%	135	21.1
2100	**26**	66%	121	18.5	63%	122	17.5	60%	123	16.7
2100	**24**	57%	114	16	54%	114	15.1	52%	115	14.4
2100	**22**	43%	100	12.1	41%	100	11.5	39%	100	10.9
2100	**20**	37%	92	10.2	35%	91	9.7	33%	89	9.2
1900	**26**	61%	117	17.1	58%	118	16.2	55%	119	15.4
1900	**24**	53%	110	14.9	50%	111	14.1	48%	111	13.4
1900	**22**	41%	97	11.4	39%	97	10.8	37%	96	10.2
1900	**20**	35%	89	9.6	33%	88	9.1	31%	85	8.7

* *Propeller RPM*
** *Fuel Consumption for each Engine*

Weight: *1150 kg (2535 lb)*
Pressure Altitude: *3000 ft*

RPM*	MAP [inHg]	ISA – 30°C (-21°C)			ISA (9°C)			ISA + 30°C (39°C)		
		PWR	KTAS	F.C.** [lt/hr]	PWR	TCAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]
2388	**26.4**	92%	141	25.7	87%	143	24.3	83%	144	23.1
2250	**26.4**	89%	139	25	85%	141	23.6	80%	143	22.4
2250	**26**	85%	137	23.9	81%	138	22.6	77%	140	21.5
2250	**24**	72%	128	20	68%	129	18.9	64%	130	18
2250	**22**	57%	116	16	54%	117	15.1	51%	118	14.3
2250	**20**	48%	108	13.4	45%	108	12.7	43%	108	12.1
2100	**26.4**	85%	137	23.9	81%	138	22.6	77%	140	21.4
2100	**26**	82%	134	22.8	77%	136	21.6	73%	137	20.5
2100	**24**	69%	125	19.2	65%	127	18.1	62%	128	17.2
2100	**22**	54%	114	15.2	51%	114	14.3	49%	115	13.6
2100	**20**	45%	104	12.6	43%	104	11.9	41%	104	11.3
1900	**26.4**	78%	132	21.9	74%	134	20.7	70%	135	19.6
1900	**26**	75%	130	20.9	71%	131	19.8	67%	132	18.8
1900	**24**	63%	121	17.7	60%	122	16.7	57%	123	15.9
1900	**22**	50%	110	14.1	48%	110	13.3	45%	110	12.6
1900	**20**	42%	101	11.7	40%	101	11.1	38%	100	10.6

* *Propeller RPM*
** *Fuel Consumption for each Engine*

Weight: *1150 kg (2535 lb)*
Pressure Altitude: *6000 ft*

RPM*	MAP [inHg]	ISA – 30°C (-27°C)			ISA (3°C)			ISA + 30°C (33°C)		
		PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]
2388	**23.6**	83%	139	23.3	79%	141	22	75%	142	20.9
2250	**23.6**	81%	138	22.6	76%	139	21.4	73%	141	20.3
2250	**22**	68%	129	19.1	65%	130	18.1	61%	131	17.2
2250	**20**	57%	119	15.8	54%	120	14.9	51%	120	14.2
2250	**18**	46%	108	12.9	44%	108	12.2	41%	107	11.6
2100	**23.6**	77%	135	21.6	73%	137	20.4	69%	138	19.4
2100	**22**	65%	126	18.2	62%	127	17.2	59%	128	16.4
2100	**20**	54%	116	15	51%	116	14.1	48%	117	13.4
2100	**18**	44%	106	12.4	42%	106	11.7	40%	105	11.1
1900	**23.6**	71%	130	19.8	67%	132	18.7	64%	133	17.8
1900	**22**	60%	122	16.8	57%	123	15.8	54%	123	15
1900	**20**	50%	112	13.9	47%	112	13.1	44%	112	12.4
1900	**18**	41%	102	11.6	39%	102	10.9	37%	100	10.4

* *Propeller RPM*
** *Fuel Consumption for each Engine*

Weight: *1150 kg (2535 lb)*
Pressure Altitude: *9000 ft*

RPM*	MAP [inHg]	ISA – 30°C (-33°C)			ISA (-3°C)			ISA + 30°C (27°C)		
		PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]
2388	**21.1**	75%	137	20.9	71%	139	19.7	67%	140	18.7
2250	**21.1**	73%	136	20.3	69%	137	19.2	65%	138	18.2
2250	**20**	65%	130	18.3	62%	131	17.2	58%	131	16.3
2250	**18**	53%	118	14.9	50%	119	14	48%	118	13.3
2100	**21.1**	69%	133	19.4	65%	134	18.3	62%	135	17.4
2100	**20**	62%	127	17.4	59%	128	16.4	56%	128	15.6
2100	**18**	51%	116	14.2	48%	116	13.4	46%	116	12.7
1900	**21.1**	64%	128	17.8	60%	129	16.8	57%	130	15.9
1900	**20**	57%	122	16	54%	123	15.1	51%	123	14.3
1900	**18**	47%	112	13.2	44%	112	12.4	42%	111	11.8

* *Propeller RPM*
** *Fuel Consumption for each Engine*

Weight: *1150 kg (2535 lb)*
Pressure Altitude: *12000 ft*

RPM*	MAP [inHg]	ISA – 30°C (-39°C)			ISA (-9°C)			ISA + 30°C (21°C)		
		PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]	PWR	KTAS	F.C.** [lt/hr]
2388	**18.8**	67%	135	18.8	63%	136	17.7	60%	136	16.7
2250	**18.8**	65%	133	18.2	61%	134	17.2	58%	134	16.3
2250	**18**	60%	129	16.8	57%	129	15.9	54%	129	15
2100	**18.8**	62%	130	17.4	59%	131	16.4	56%	132	15.5
2100	**18**	58%	126	16.1	54%	126	15.2	51%	126	14.4
1900	**18.8**	57%	125	15.9	54%	126	15	51%	126	14.2
1900	**18**	53%	121	14.8	50%	121	13.9	47%	121	13.2

* *Propeller RPM*
** *Fuel Consumption for each Engine*

15. LANDING PERFORMANCES

Weight = *1230 kg (2712 lb)*

Flaps: *LAND*
Short Final Approach Speed = *70 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections

Headwind: - 5m for each kt (*16 ft/kt*)
Tailwind: + 11m for each kt (*36ft/kt*)
Paved Runway: - *2%* to Ground Roll
Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	199	219	239	259	**231**
	At 50 ft AGL	308	334	359	384	**349**
1000	Ground Roll	206	227	248	269	**238**
	At 50 ft AGL	318	344	370	396	**358**
2000	Ground Roll	214	236	257	279	**245**
	At 50 ft AGL	328	355	382	408	**367**
3000	Ground Roll	222	244	267	289	**252**
	At 50 ft AGL	348	377	406	434	**385**
4000	Ground Roll	230	254	277	300	**260**
	At 50 ft AGL	348	377	406	434	**385**
5000	Ground Roll	239	263	287	311	**268**
	At 50 ft AGL	359	389	419	448	**395**
6000	Ground Roll	248	273	298	323	**276**
	At 50 ft AGL	371	402	432	463	**405**
7000	Ground Roll	258	284	310	336	**285**
	At 50 ft AGL	382	415	446	478	**416**
8000	Ground Roll	268	295	322	349	**294**
	At 50 ft AGL	395	428	461	494	**427**
9000	Ground Roll	278	306	334	362	**303**
	At 50 ft AGL	408	442	476	510	**438**
10000	Ground Roll	289	318	348	377	**313**
	At 50 ft AGL	421	457	492	527	**450**

Weight = *1080 kg (2381 lb)*

Flaps: *LAND*
Short Final Approach Speed = *70 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections

Headwind: - 5m for each kt (*16 ft/kt*)
Tailwind: + 11m for each kt (*36ft/kt*)
Paved Runway: - *2%* to Ground Roll
Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	175	192	210	227	**203**
	At 50 ft AGL	271	293	315	337	**306**
1000	Ground Roll	181	199	218	236	**209**
	At 50 ft AGL	279	302	325	348	**314**
2000	Ground Roll	188	207	226	245	**215**
	At 50 ft AGL	288	311	335	358	**322**
3000	Ground Roll	195	215	234	254	**222**
	At 50 ft AGL	306	331	356	381	**338**
4000	Ground Roll	202	223	243	263	**228**
	At 50 ft AGL	306	331	356	381	**338**
5000	Ground Roll	210	231	252	273	**235**
	At 50 ft AGL	315	342	368	394	**347**
6000	Ground Roll	218	240	262	284	**243**
	At 50 ft AGL	325	353	380	406	**356**
7000	Ground Roll	226	249	272	295	**250**
	At 50 ft AGL	336	364	392	420	**365**
8000	Ground Roll	235	259	283	306	**258**
	At 50 ft AGL	347	376	405	434	**375**
9000	Ground Roll	244	269	294	318	**266**
	At 50 ft AGL	358	388	418	448	**385**
10000	Ground Roll	254	280	305	331	**275**
	At 50 ft AGL	370	401	432	463	**395**

Weight = *930 kg (2051 lb)*
Flaps: *LAND*
Short Final Approach Speed = *70 KIAS*
Throttle Levers: *Idle*
Runway: *Grass*

Corrections

Headwind: - 5m for each kt (*16 ft/kt*)

Tailwind: + 11m for each kt (*36ft/kt*)

Paved Runway: - *2%* to Ground Roll

Runway slope: - 2.5% to Ground Roll for each +1%

Pressure Altitude [ft]		Distance [m]				
		Temperature [°C]				ISA
		-25	0	25	50	
S.L.	Ground Roll	150	166	181	196	**175**
	At 50 ft AGL	233	252	271	290	**264**
1000	Ground Roll	156	172	187	203	**180**
	At 50 ft AGL	240	260	280	299	**270**
2000	Ground Roll	162	178	194	211	**185**
	At 50 ft AGL	248	268	288	309	**277**
3000	Ground Roll	168	185	202	219	**191**
	At 50 ft AGL	263	285	307	328	**291**
4000	Ground Roll	174	192	209	227	**197**
	At 50 ft AGL	263	285	307	328	**291**
5000	Ground Roll	181	199	217	235	**203**
	At 50 ft AGL	272	294	317	339	**299**
6000	Ground Roll	188	207	226	244	**209**
	At 50 ft AGL	280	304	327	350	**307**
7000	Ground Roll	195	215	234	254	**215**
	At 50 ft AGL	289	313	338	361	**315**
8000	Ground Roll	203	223	243	264	**222**
	At 50 ft AGL	299	324	349	373	**323**
9000	Ground Roll	210	232	253	274	**229**
	At 50 ft AGL	308	334	360	386	**331**
10000	Ground Roll	219	241	263	285	**237**
	At 50 ft AGL	319	346	372	399	**340**

16. BALKED LANDING CLIMB GRADIENT

Flight conditions (ISA and SL):

Weight:	*1230 kg (2712 lb)*
Throttle levers	*Both FULL FORWARD*
Flaps	*T/O*
Landing gear	*DOWN*
Weight	*MTOW 1230kg (2712 lb)*
Speed	*72 KIAS*
Climb gradient	*9.4% (5.4°)*

17. NOISE DATA

Noise level, determined in accordance with ICAO/Annex 16 4th Ed., July 2005, Vol. I°, Chapter 10, is **72.82** dB(A).

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Supplement G10: page replacement instructions

WEIGHT AND BALANCE

See Section 6 of the Basic Manual

Supplement G10: page replacement instructions

AIRFRAME and SYSTEMS DESCRIPTION

Apply following instruction:

Section 7 – AIRFRAME and SYSTEMS DESCRIPTION pages as per Supplement G1 instructions are still valid

SUPPLEMENT NO. G11 – VLO/VLE INCREASE

RECORD OF REVISIONS

Rev	Revised page	Description of Revision	Tecnam Approval			EASA Approval Or Under DOA Privileges
			DO	OoA	HDO	
0	all	Editorial change (*)	A. Sabino	C. Caruso	M. Oliva	DOA Approval

(*) This supplement was originally issued under EASA approval no. 10041602.

LOEP

Page	Revision
G11-1	Rev 0
G11-2	Rev 0
G11-3	Rev 0
G11-4	Rev 0
G11-5	Rev 0
G11-6	Rev 0

INTRODUCTION

This Supplement applies to aircraft equipped with Garmin G950 Integrated Flight Deck System (Design Change MOD 2006/002) and provides supplemental information to increase the Vlo/Vle when the Tecnam Service Bulletin SB 098-CS or Design Change MOD 2006/033 has been embodied on the airplane.

The information contained herein supersedes the basic Aircraft Flight Manual.

SECTION 2 - LIMITATIONS

SPEED LIMITATIONS

On the left side instrument panel, above on the left, it is placed the following placard reporting the speed limitations:

Maximum L.G. op. speed

V_{LO} / V_{LE} = 122 KIAS