

Check List

Turbo Seminole

PA44-180T

G-FRST

Do not remove from Aircraft

Taylor Aviation, Cranfield

PA44-180T G-FRST Check List

G-FRST, Turbo Seminole PA44-180T

Introduction

Captain's Pre Take-Off Briefing

After Take-Off I shall turn onto a heading of and climb to FL .

In the event of a major emergency before rotate I shall close the throttles and abort the take-off. If airborne, with runway remaining and gear still down, I shall land back on. Otherwise I shall remain control of the aircraft, deal with the emergency and request a priority landing

Introduction

These checks are to be carried out before the first flight of the day, after hangar maintenance or before rating renewal flights. Before entering the Aircraft walk round and check that wings, tailplane and flying control surfaces including flaps are clear of frost, snow, ice and mud. Check that the pitot head cover is removed and the aircraft is parked in a clear area for start up and taxiing. Note the position of the nearest fire extinguisher and check the parking area for ice. If the aircraft has been standing in freezing conditions and there is any evidence of ice it must be fully de-iced by spraying including the elevators.

Amendment Record

Revision 1, December 2001

Amendment No.	Issue Date	Amended by	Date Amended

PA44-180T G-FRST Check List

Flight Deck Preparation (Transit see page 5)	
1	Control Lock Remove
2	Park Brake On
3	Fire Extinguisher Check
4	First Aid Kit Check
5	Magneto/Starter Switches Off
6	Avionics (Master) Off
7	All Electrical Services Off
8	Circuit Breakers In
9	Alternate Static Source Check
10	Gear Selector Down
11	Master Switch On
12	Gear Indicator 3 Greens
13	Fuel Selector On, Check Contents
14	Pitot Heater On, Check, Off
15	Stall Warner Check
16	Nav/Anti Collision Lights On, Check, Off
17	Landing/Taxy Lights On, Check, Off
18	Panel Lights On, Check, Off
19	Flaps Down
20	Master Switch Off
21	Empty Seats Secure

Right Wing	
1	Flap, Aileron, Wing Check
2	Wing Tip and Lights Check
3	Leading Edge Check
4	Tie Down Remove
5	Fuel Drains Check
6	Right Main Gear Check
7	Oil Check
8	Fuel Check
9	Engine Nacelle Check
10	Propeller Check
11	Cowl Flap Check

PA44-180T G-FRST Check List

Nose Section	
1	Nose Gear Check
2	Landing Light Check
3	Wheel Bay Check
4	Windshield Check
5	OAT Probe Check

Left Wing	
1	Cowl Flap Check
2	Propeller Check
3	Engine Nacelle Check
4	Fuel Check
5	Oil Check
6	Left Main Gear Check
7	Fuel Drains Check
8	Tie Downs Remove
9	Leading Edge Check
10	Stall Warner Check
11	Pitot/Static Mast Check
12	Wing Tip and Lights Check
13	Wing, Aileron, Flap Check

Empennage	
1	Rivets, Skin Check
2	Antennas Check
3	Baggage Door Check
4	Fin Air Scoop Check
5	Stabilator and Trimmer Check
6	Rudder and Trimmer Check
7	Tail Light Check
8	Tie Down Remove
9	Rivets/Skin Check

External

Pre-Flight - External

PA44-180T G-FRST Check List

Flight Deck Preparation		Transit
1	Park Brake	On
2	Magnetos	Off
3	Gear Selector	Down
4	Circuit Breakers	Check
5	Master Switch	On
6	Gear Indicator	3 Greens
7	Over/Undervoltage Lights	Check
8	Fuel Selectors	On, Check Contents
9	Master Switch	Off
10	Flaps	Lower

External Checks		Transit
1	Airframe General	Check
2	Flying Controls	Check
3	Flaps	Check
4	Windscreen	Check
5	Landing Gear	Check
6	Pitot/Static Mast	Check
7	Fuel Tanks	Check
8	Oil	Check

Before Start Checks		
1	Preflight	Complete
2	Seats	Adjusted & Locked
3	Seat Belts	Secured
4	Brakes	Set
5	Passenger Briefing	Complete
6	Elevator Trim	Check and Set for T/O
7	Rudder Trim	Check and Set for T/O
8	Flaps	Up
9	Cowl Flaps	Open
10	Carburettor Heat	Full and Free, set Cold
11	Mixtures	Full and Free, set Rich
12	Propellers	Full and Free, set Fine
13	Throttles	Full and Free, set ¼" open
14	Flying Controls	Full and Free, Correct Sense

PA44-180T G-FRST Check List

Before Start Checks (Continued)		
14	Gear Selector	Down
15	Emergency Gear Knob	In & Locked
16	Instruments	Check
17	Avionics Master (if fitted)	Off
18	Battery Master	On
19	Circuit Breakers	Check
20	Switch/Panel Lights	As Required
21	Beacon	On
22	Navigation Lights	As Required
23	Gear Indicator	3 Greens
24	Annunciators	Check
25	Alternators	Off

Start		
1	Fuel Selectors	On
Port Engine		
2	Magnetos	On
3	Propeller Area	Clear
Normal Start / Hot Start		Flooded Start
4	Fuel Pump	On
	Fuel Pump	Off
	Mixture	Idle Cut Off
	Throttle	Fully Open
5	Primer (don't prime when engine is hot)	As required. Max 2 Seconds
6	Starter	Engage
	Throttle	Retard
	Mixture	Advance
7	Throttle	1100 Rpm
8	Starter Warning Light	Out
9	Oil Pressure	Rising to Green
10	Alternator	On
11	Fuel Pump	Off, Check Pressure
12	Magnetos	Check
13	Ammeter	Check
14	Vacuum	Check
Starboard Engine		Repeat 2-14

Start

Transit - Before Start

PA44-180T G-FRST Check List

After Start Checks

1	Avionics (Master Switch), Intercom	On
2	Heater and Defroster	As Required
3	Gyro Compass	Synchronised
4	Electric Trim & Autopilot	Check, Off
5	Radio & Navigation Equipment	Pre Flight Check
6	Flight Instruments	Check
7	Fuel Selector	Cross-feed
8	Taxi Clearance	Obtained

Taxi Checks

1	Brakes & Steering	Check
2	Flight Instruments	Check
3	Heater and Defroster	Check

Power Checks

1	Position	Satisfactory
2	Brakes	Set
3	Fuel Selectors	On
4	Mixtures	Set
5	Propellers	Fine
6	Engine T&Ps	Green

Port Engine

7	Throttle	1500 Rpm
8	Propeller Feathering	Check, max 500 Rpm drop
9	Throttle	2000 Rpm
10	Propeller	Governor Check
11	Carburettor Heat	Check
12	Magnetos	Max Drop 175 Rpm Max Diff. 50 Rpm

13	Alternator	Check
14	Suction	Check
15	Engine T&Ps	Green
16	Engine Idle	Check
17	Throttle	Reset 1100 Rpm

Starboard Engine

Repeat 7-17

After Start – Taxi - Power

Pre Take Off

PA44-180T G-FRST Check List

Pre Take-Off Checks

1	Fuel	On
2	Trimmers	Set
3	Flaps	Set
4	Cowl Flaps	Set
5	Alternate Air	Off
6	Throttle Friction	Set
7	Mixtures	Rich
8	Propellers	Fine
9	Flight Instruments	Check
10	Altimeters	Set
11	Magnetos	On
12	Fuel Pumps	On
13	Seats and Seatbelts	Check
14	Doors and Windows	Check
15	Flight Controls	Full and Free
16	Airways Clearance	Obtain
17	Radio & Navigation Equipment	Set
18	Departure Clearance	Obtain
19	Departure Briefing	Complete

Lining Up on Runway

1	Pitot Heat	On
2	Anti Ice (if fitted)	As Required
3	Strobe Lights	On
4	Transponder	Alt

Lined Up on Runway

1	Compasses	Check
2	Throttles	2000 Rpm
3	Manifold Pressures	Equal
4	Engine T&Ps	Check
5	Brakes	Release
6	Throttles	34" MAP

PA44-180T G-FRST Check List

After Take Off / Go Around Checks		
1	Brakes	On/Off
2	Undercarriage	Up before 109 Kts
3	Flaps	Up above 200'
4	Climb Power	Set
5	Landing Lights	Off
6	Engine T&Ps	Green
7	Altimeters	Set
8	Cowl Flaps	As Required
9	Fuel Pumps	Off above 1000'
10	Radio & Navigation Equipment	Set and Identified
11	On Go-Around	Inform ATC
12	Icing	Check

Cruise Checks		
1	Fuel	Check
2	Fuel Pumps	On if required above 10.000'
3	Radio	Check
4	Engine T&Ps	Check
5	Carburettor Heat	Check
6	Cowl Flaps	Set
7	DI/Compass	Synchronised
8	Altimeters	Set
9	Minimum Safe Altitude	Check
10	Icing	Check
11	En Route Weather	Update

Decent Checks		
1	Minimum Sector Altitude	Checked
2	Weather	Obtained, Checked
3	Aerodrome Minima	Checked
4	STAR and Approach Plates	Available
5	Crew Briefing	Complete
6	Altimeters	Set
7	Icing	Check
8	Fuel	Sufficient

After T/O – Cruise – Descent

Approach – Landing – Final

PA44-180T G-FRST Check List

Approach Checks		
1	Fuel	On and Sufficient
2	Engine T&Ps	Check
3	Carburettor Heat	Check
	Cowl Flaps	Set
4	Mixtures	As Required
5	Radio & Navigation Equipment	Set, Identified
6	Altimeters	Set
7	DI/Compass	Synchronised
8	Fuel Pumps	On
9	Seat Belts	Secure
10	Crew/Passenger Briefing	Complete

Pre Landing Checks		
1	Brakes	Off
2	Undercarriage	Down <129 Kts
3	Flaps	As Required, Vfe
4	Brakes	Check
5	Mixture	Rich as required
6	Propellers	Set
7	Fuel	On
8	Fuel Pumps	On
9	Altimeters	Set and Cross Check
10	Alternate Air	As Required
11	Landing Light	On
12	DME – O/M - Beacon	Altimeter Check

Finals Checks		
1	Mixtures (Reds)	Set
2	Propellers (Blues)	Set
3	Gear Indicator (Greens)	3 Greens
4	Flaps	As Required
5	Altimeters	Set and Cross Check

PA44-180T G-FRST Check List

After Landing Checks		
1	Flaps	Up
2	Cowl Flaps	Open
3	Carburettor Heat	Cold
4	Throttle Friction	Loose
5	De-icing Equipment	Off
6	Radio & Navigation Equipment	Off/As Required
7	Fuel Pumps	Off
8	Pitot Heat	Off
9	Strobe & Navigation Lights	Off

Shut Down Checks		
1	Parking Brake	Set
2	Throttles	1100 Rpm
3	Magnetos	Check
4	Avionics (Master switch if fitted)	Off
5	Mixtures	Idle Cut Off
6	Throttles	Closed
7	Magnetos	Off
8	All Electrical Services	Off
9	Master Switch	Off
10	Alternators	Off
11	Airframe	Secure
12	Paperwork	Complete

Safety Checks – Pre-Stalling		
H	Height	Sufficient to recover by 3000' AGL
A	Airframe	Gear/Flaps as required. Trimmed S&L. Brakes Off
S	Security	No loose articles. Hatches secure. Harnesses tight
E	Engines	Mixture rich. Props fully fine. T&P's green. Fuel pumps on
L	Location	Clear of towns, active airfields, cloud and controlled Airspace. Check position
L	Look Out	Start immediately after lookout completed

Safety Checks – Continued Stalling		
H E L L	As Above	

PA44-180T G-FRST Check List

Flight Stage	MAP "HG	RPM	IAS KTS	IAS MPH	Flaps	Attitude
Rotate		Max	75	86	0	
Safety Speed		Max	75	86	0	
Gear Retraction		Max	75	86	0	
Climb Best Rate		2500	88	101	0	
Climb Best Angle		2500	82	94	0	
Climb Cruise		2400			0	
Cruise		2400			0	
Cruise Descent		2400			0	
Holding/Beacon		2400			0	
Outbound Descent		2400			0	
ILS Localiser		2400			0	
ILS GS Intercept, Gear Dn		2400			0	
ILS GS		2400			2	
Circuit with Gear/Flaps		2400			2	
Final with Gear/Flap		Max			3	
Threshold		Max			3	
Single Minimum Control			56	65		
Single Climb Best Rate		Max		101	0	
Single Climb Best Angle		Max		94	0	
Single Cruise		2500			0	
Single Final		Max	88	101	2	
Stall Clean MTOW		Max	57	66	0	
Stall with Gear/Flaps		Max	55	63	3	
Gear Limiting, Down			140	161		
Gear Limiting, Up			109	126		
Flap Limiting			111	128		
Rough Air Manoeuvre			112-135	129-155	0	
Normal Operating Speed			169	195	0	
Never Exceed			202	233	0	

Operating Data and Speeds

After Flight, HASELL

PA44-180T G-FRST Check List

Engine Fire (Ground)		
1	Mixtures	Idle Cut Off
2	Fuel Selectors	Off
3	Master Switch	Off
4	Fire Extinguisher	Remove
5	Brakes	Leave Off
6	Aircraft	Vacate
Engine Fire in Flight		
1	Fuel	Off
2	Mixture	Idle Cut Off
3	Propeller	Feather
4	Fuel Pump	Off
5	Magnetos	Off
6	Alternator	Off
7	Check fire is out	
8	Cowl Flaps	As required
9	Live Engine	Monitor
10	Mayday Call	
11	Fuel Cross Feed	As Required
Electrical Smoke or Fire		
1	Master Switch	Off
2	All Electrical Services	Off
3	Master Switch	On
4	Essential Equipment	On

Fire

PA44-180T G-FRST Check List

Engine Failure – Ground Roll			
1	Throttles		Idle
2	Braking		Maximum
3	Advise ATC		
4	Shut down engines if unable to stop on runway		
Engine Failure – After Lift Off & In Flight			
1	Maintain Control		
2	Power		Full
3	Gear and Flap		Up
4	Dead Side	Throttle	Close
		Propeller	Feather
		Mixture	Idle Cut Off
		Fuel	Off
		Fuel Pump	Off
		Magnetos	Off
		Generator	Off
		Cowl Flap	Closed
5	Check for Fire		
6	Live Side	Power	As required, 36.5" MAP MAX
		T&Ps	Green
		Generator	Check Load
		Vacuum	Check
		Cowl Flap	As Required
7	Radio		Mayday Call
8	Fuel Crossfeed		As Required

If altitude permits try to troubleshoot/restart
before feathering failed engine

Feathering is not possible below 950 Rpm

PA44-180T G-FRST Check List

Air Start Checks		
1	Fuel	On
2	Fuel Pump	On
3	Propeller	Cruise Position
4	Mixture	Rich
5	Throttle	¼ Inch Open
6	Magnetos	On
	Primer	On, 2 seconds
7	Starter	Engage
8	Throttle	15" MAP
9	Propeller	2000 RPM
10	Alternator	On
11	T&Ps	Wait for Green

Single Engine Landing		
1	Gear	Down
2	Airspeed	Blue Line to ACH
3	Power	As Required
4	Wing Flaps	As Required
	ACH	300' AGL

Single Engine Go Around		
1	Throttle	36.5" MAP
2	Flaps	Up
3	Gear	Up
4	Speed	Blue Line

Airstart – Single Engine

Electrical

PA44-180T G-FRST Check List

Starter Warning Light On		
On Ground		
1	Alternator Switches	Off
2	Master Switch	Off
3	Both Engines	Shut Down
In Air after Air Start		
1	Alternator Switches	Off
2	Master Switch	Off
3	Land as soon as possible	
4	Landing Gear	Emergency Lowering

Complete Loss of Electrical Power		
1	Alternators	Off
2	Master Switch	Off
3	Electrical Services	All Off
4	Master Switch	On
5	Alternators	On
6	Electrical Load	Minimise On
7	Generator Load	60 Amps Max
8	Landing Gear	Emergency Lowering

Electrical Overload		
1	Alt. Indicators and Lights	Check
2	Ammeters	Check Inoperative
3	Alternator Switch	Inoperative Off
4	Electrical Load	Reduce
5	Circuit Breakers	Check
6	Inoperative Altimeter	Recycle & Check
7	Output not Restored	Inoperative Off

Unscheduled Electric Elevator Trim		
1	Aircraft Attitude	Maintain
2	Control Yoke Trim Switch	Opposite Direction
3	Trim Master Switch	Off
4	Manual Elevator Trim	As Required

PA44-180T G-FRST Check List

Manual Landing Gear Extension

Red light indicates gear in transit. Recycle gear if not extinguished. Closing the throttles and/or lowering the flaps to 2nd or 3rd notch when gear is not locked down will illuminate gear unsafe light and sound gear warning horn.

Troubleshoot

1	Circuit Breakers	Check
2	Master Switch	On
3	Alternators	Check
4	Navigation Lights	Off
5	Bulbs	Check

Gear Extension

1	Airspeed	< 100 Kts
2	Gear Selector	Down
3	Emergency Gear Knob	Pull
4	Gear Indicator	3 Greens
5	Emergency Gear Knob	Leave Out

Gear Up Landing

1	Cowl Flaps	Closed
2	Wing Flaps	Down
3	Mixtures	Idle Cut Off
4	Fuel	Off
5	Master Switch	Off
6	Touchdown	Wings Level
7	Evacuate	

Landing Gear

Emer decent --Fuel Crossfeed - Ice

PA44-180T G-FRST Check List

Emergency Descent

1	Throttles	Closed
2	Gear	Down
3	Propellers	Fully Fine
4	Airspeed	160 MPH, 140 Kts

Maximum Glide Configuration

1	Propellers	Feather
2	Flaps	Up
3	Gear	Up
4	Cowl Flaps	Closed
5	Speed	100 MPH, 90 Kts

Fuel Crossfeed

Only use Crossfeed during level flight

Left Hand Engine

1	LH Fuel Selector	Crossfeed
2	LH Fuel Pump	Off
3	Before Landing	Crossfeed Off

Right Hand Engine

1	RH Fuel Selector	Crossfeed
2	RH Fuel Pump	Off
3	Before Landing	Crossfeed Off

Icing in Flight

1	De-icing (If fitted)	As required
2	Propeller Anti Ice	On
3	Alternate Air	On
4	Cowl Flaps	Closed
5	Fuel Pumps	On
6	Propeller Controls	2600 Rpm
7	Heater/Defrost	Fully On
8	Pitot Heater	On
9	Alternate Static Source	On

PA44-180T G-FRST Check List

Spin Recovery*

1	Power	Idle
2	Ailerons	Neutral
3	Rudder	Full Rudder opposite to spin direction
4	Control Column	Forward, Break Stall
5	On Recovery	Neutralise

* This recovery technique is based on the best information available. Spin recovery is not a certification requirement for multi-engine aircraft and no actual tests have been conducted.

Propeller Overspeed

1	Throttle	Retard
2	Oil Pressure	Check
3	Propeller Control	Full decrease Rpm
4	Propeller Control	Set if Possible
5	Airspeed	Reduce
6	Throttle	< 2700 Rpm

Door Open in Flight

1	Speed	<82 Kts
2	Cabin Vents	Closed
3	Storm Window	Open
4	Yaw	Left
5	Pull on Armrest	Latch Door (Side then Top)

Emergency Exit

1	Thermoplastic Cover	Remove
2	Handle	Pull Forward
3	Window	Push Out

Combustion Heater Overheat

Auto Switch Off, Do Not Attempt to Restart

Spin - Prop Overspeed - Doors

PA44-180T G-FRST Check List

Speeds – Altimeter Settings

Speeds		Knots	MPH
Vr	Rotate	75	86
Vy	Climb, Best Rate	88	101
Vx	Climb, Best Angle	82	94
Vyse	Climb, Best Rate, SE	88	101
Vxse	Climb, Best Angle, SE	82	94
Vlo	Gear Limiting, Down	140	161
Vloup	Gear Limiting, Up	109	126
Vs	Stall Speed, Clean	57	66
Vso	Stall Speed, Landing	55	63
Vfe	Flap Extension Speed	111	128
Va	Manoeuvre Speed	112-135	129-155
Vno	Normal Operating Speed	169	195
Vne	Never Exceed Speed	202	233
Vmca	Minimum Control Speed	56	65
X-W	Max Cross Wind		
Red	Red Line Speed	56	65
Blue	Blue Line Speed	88	101

Altimeter Setting Procedures

Flight Stage	No 1 Alt	No 2 Alt
Before Take Off	Airfield QNH	Airfield QNH
Climb to Above TA	1013.2	Regional QNH
Cruise above TL	1013.2	Regional or Zone QNH
Cruise below TA	Regional QNH	Regional or Zone QNH
Descent to FL	1013.2	Airfield QNH
Descent to Altitude	Airfield QNH	Airfield QNH
Approach, FAF	Airfield QNH, Cross-check	Airfield QNH
Final Approach	Airfield QNH	Airfield QNH
Go Around	Airfield QNH	Airfield QNH
Circuits	Airfield QFE	Airfield QNH