PA-30 Twin Comanche checklist

INTERIOR PREFLIGHT

Required Documents	On Board
Master Switch	OFF
Landing Gear Handle	DOWN
Fuel Selector	CYCLE
Master Switch	ON
Fuel Quantity Gauges	CHECK
Gear Indicator	GREEN
Flaps	EXTEND
Aircraft Lights	ON/CHECK
Pitot Heat	ON/CHECK
Stall Warning	CHECK
All Electrical Switches	OFF

EXTERIOR PREFLIGHT

RIGHT WING:	
Flap	CHECK
Aileron	CHECK
Nav/Anti-Collision	CHECK
Leading Edge	CHECK
Fuel Tanks	CHECK
Fuel Tank Sump	DRAIN
Fuel Vent	CHECK
Oil	6 to 8 quarts
Cowling	CHECK
Propeller	CHECK
Main Wheel/Strut	CHECK (2¾")
Brakes	CHECK
NOSE:	
Windshield	CHECK
Nose Wheel/Strut	CHECK (2")
Air Inlets	CHECK
Fuel System Sump	DRAIN
LEFT WING:	
Main Wheel/Strut	CHECK
Brakes	INSPECT
Fuel Tank Sump	DRAIN
Fuel Vent	CHECK
Fuel Vent	CHECK
Fuel Quantity	CHECK
Oil	6 to 8 quarts
Cowling	CHECK
Propeller	CHECK
Leading Edge	CHECK
Pitot Head	CHECK

EXTERIOR PREFLIGHT CON'T

Nav/Anti Collision	CHECK
Aileron	CHECK
Flap	CHECK
FUSELAGE/TAIL:	
Baggage Door	CHECK
Antennas	SECURE
Lights	SECURE
Stabilator	CHECK
Rudder	CHECK

BEFORE START

Preflight	COMPLETE
Belts/Harnesses/Seats	SECURE
Circuit Breakers	IN
Avionics Master	OFF
Fuel Selector	MAIN TANKS

ENGINE START

Brakes	HOLD
Throttle	½ INCH OPEN
Propeller	HIGH RPM
Mixture	Full Rich
Master Switch	ON
Aircraft Lights	AS REQUIRED
Fuel Pump	Prime Engine
To Prime, Turn Fuel Pump on and wait for full pressure to stabilize Then Turn Fuel Pump Off	
Mixture (Flow Stable)	IDLE CUTOFF
Magnetos	ON
Propeller Area	CLEAR
Starter	ENGAGE
Mixture	RICH when engine fires
Throttle	1,000 RPM
Oil Pressure	CHECK

BEFORE TAXI

Generators	ON
Mixture	**LEAN**
Avionics Master	ON
Transponder	ALT
Avionics	SET/CHECK
Flight Instruments	SET/CHECK
Flight Controls	Free and Correct

RUN-UP

Brakes	HOLD
Stabilator Trim	TAKEOFF
Mixture	**RICH**
Throttle	1500 RPM
Propellers	Feather Check
Throttle	2200 RPM
Magnetos	CHECK
(Max. Drop 175 RPM, Diff. 50 RPM)	
Alternate Air	CHECK
Vacuum	5.0" Hg.+/- .2
Engine Gauges	CHECK GREEN
Flight Instruments	SET/CHECK
Throttle	IDLE CHECK
Throttle	1000 RPM
Radios/Nav	SET
Magnetos	ALL ON
Door	LATCH

BEFORE TAKEOFF

Fuel Selector	MAIN TANKS
Stabilator Trim	TAKEOFF
Flaps	AS REQUIRED
Cowl Flaps	OPEN
Mixture	**RICH**
Propeller	HIGH RPM
Aircraft Lights	As Required
Fuel pumps	ON
Transponder	ALT
Takeoff Brief	Complete

NORMAL TAKEOFF

Runway Heading	Verify
Rotate	90-97MPH

CLIMB/GO AROUND

Speed	112 MPH
Gear	UP
Flaps	0°
Cowl Flaps	OPEN
Climb Power	24"MP, 2400 RPM
Fuel Pumps	AS REQUIRED
Aircraft Lights	AS REQUIRED

CRUISE

Cruise Power	SET (21/2400)
Cowl Flaps	CLOSED
Mixture	SET
Fuel pumps	OFF
Once Level, Use Tip Tanks, Aux Tanks, Then Mains	

DESCENT (before IAF)

Fuel pumps	ON
Mixture	RICH
Fuel Selector	Mains
Approach Brief	Complete

BEFORE LANDING (At FAF)

TUPL Check	Complete
Fuel pumps	ON
Fuel Selectors	Mains
Mixture	RICH
Propeller	FULL FORWARD
Aircraft lights	AS REQUIRED
Landing Gear	DOWN &LOCKED
Flaps	AS REQUIRED

FINAL CHECK (1000 AGL)

Landing Gear	DOWN/GREEN
Propeller	FULL FORWARD
Flaps	SET
Lights On / Verify Landing Clearance	

AFTER LANDING

Flaps	RETRACT
Cowl Flaps	OPEN
Mixture	**LEAN**
Aircraft lights	AS REQUIRED
Fuel pumps	OFF
Transponder	STANDBY

SHUT DOWN

Heater Switch and Valve	OFF
Avionics Master	OFF
Throttle	IDLE
Mixture (one at a time)	IDLE CUT-OFF
Magnetos	OFF
All switches	OFF

IMPORTANT SPEEDS

	MPH	KIAS
Vr	90-97	78-84
Vmc	90	78
Vx	90	78
Vy	112	98
Vyse	**105**	**91**
Vfe	125	108
Vlo	125	108
Vle	150	130
Va (3600 lbs.)	162	140
Approach	120	104

PA-30 Emergency Procedures

- - Engine Fire During Start - -

Starter	CRANK ENGINE
Mixture	IDLE CUT-OFF
Throttle	OPEN
Electric Fuel Pump	OFF
Fuel Selector	OFF

- - Engine Failure During Takeoff - -

BELOW 105 KIAS

Directional Control	Maintain
Throttles	IDLE
Brakes	APPLY

- - Engine Failure In Flight - -

Airspeed	Minimum 105MPH
Fuel Selectors	MAINS
Throttles	Forward
Propeller	Forward
Mixtures	RICH
Flaps	UP
Landing Gear	UP
Affected Fuel Selector	Switch Tanks
Electric Fuel Pumps	ON
Alternate Air	ON
Engine Gauges	CHECK
Magnetos	ON/CHECK

*If power is **not restored** proceed to Feathering Procedure Below The **
Land As Soon As Possible

Engine Fire in Flight

Affected Throttle	IDLE
Affected Mixture	IDLE CUT-OFF
Affected Fuel Selector	OFF
Affected Fuel Pump	OFF
Heater/defroster	OFF

-If fire persists Proceed to Emergency Descent
*- If Fire goes out, Proceed with Feathering Procedure Below The **

Feathering Procedure

Mixtures	RICH
Propeller Controls	FORWARD
Throttles	As Required
Gear	Retract
Flaps	Retract
Electric Fuel Pumps	ON

*

Affected Throttle	Verify and Idle
Affected Prop	Feather
Affected Mixture	Idle Cutoff
Inop Engine Fuel Pump	OFF

Right fuel pump on for heat

Inop Engine Mags	OFF
Inop Engine Cowl Flap	CLOSE
Inop Engine Generator	OFF
Electrical Load	Reduce
Fuel Management	Cross Feed as Required

-If engine damage is not suspected, or if engine shutdown was intentional, proceed to Unfeathering Procedure.
-If engine damage is suspected or restarting the engine is deemed unsafe, proceed to Single Engine Landing

Single Engine Landing

Land as Soon As Possible

Approach Airspeed	105 MPH minimum
Rudder Trim	Set

-Do Not Extend Gear or Flaps Until Final Descent to Land.
Proceed to Before Landing Checklist

Electrical Fire

Master Switch	OFF
Vents	OPEN
Cabin Heat	OFF

-If fire persists Proceed to Emergency Descent
Land As Soon as Possible

Generator Failure

Electrical Load	REDUCE
Ammeter	VERIFY FAILURE
Alternator Switches	OFF 30 sec.
ALT Circuit Breaker	CHECK/RESET
Alternator Switches	ON one at a time to Verify which Generator Was Affected

If both generators continue making power
Continue Normal Operations

If Power is not restored:
Affected Alternator Switch OFF
Land at an airport where repairs can be made

Monitor Operating Generator
If unable to maintain a positive charge, proceed to Complete Electrical Failure Checklist.

Complete Electrical Failure

Generators	OFF
Electrical Load	Reduce to MINIMUM for safe operations

Land as soon as Practical
Proceed to Manual Gear Extension

Propeller Overspeed

Propeller Control	DECREASE
Throttle	RETARD
Oil Pressure	CHECK
Airspeed	REDUCE
Throttle	As Required (below 2700 RPM)

Manual Landing Gear Extension

Master Switch	ON
Circuit Breakers	CHECK
Panel/Nav Lights	OFF (In Daytime)
Gear Ind. Lights	CHECK
EMER Gear Cover	Remove
Airspeed	Slow to 100 MPH
Gear Selector	DOWN
Gear Motor	Disengage
Gear Handle	*Insert in right socket and twist to secure*

Extend handle and rotate forward until left socket is clear.
Engage handle in left socket and twist to secure
Rotate Ful Forward

Gear Ind. Lights	CHECK

Emergency Descent

Throttles	IDLE
Propellers	HIGH RPM
Mixtures	RICH
Cowl Flaps	CLOSED
Bank	30° - 45°
Airspeed	194 MPH
Level Off	MSA or Pattern Alt

If Situation Persists and no suitable runway is nearby, an off Airport Landing may be necessary.

Unfeathering Procedure

Fuel Valve	ON
Electric Fuel Pump	OFF
Generators	ON
Throttle	OPEN ¼ "
Prop Control	FORWARD
Mixture Contorl	RICH
Mag Switches	ON
Starter	Engage Until Prop Windmills
Prop Control	Set To Cruise
Throttle	Low MAP until engine warm

PA-30 Maneuvers

Normal Takeoff

(Before Takeoff Checklist Complete)	
Throttle	2000 RPM
Engine Instruments	Verify Green
Throttle	Full
Rotate	90-97MPH
Climb	112 MPH
Landing Gear	UP at Positive Rate
500 ft AGL	24” MP, 2400 RPM

Normal Landing

(Before Landing Checklist Complete)	
Entry/Downwind	BCGUMPS
Downwind -	
MP	15”
Airspeed	115 MPH/100 KIAS
Flaps	10°
Base –	
Airspeed	105 MPH/91 KIAS
Flaps	20°
Final –	
Airspeed	90 MPH/78 KIAS
Flaps	Full
Gear	Check Down
Prop	High RPM
Touchdown	Just above stall speed

Short Field Takeoff Obstacle clearance

(Before Takeoff Checklist Complete)	
Flaps	T/O
Runway	Use All Available
Brakes	Hold
Throttle	Full
Engine Instruments	Verify Green
Brakes	Release
Rotate	90 MPH
Climb out	Vx – 90 MPH
Clear of obstacle	Gear Up
Climb	Vy - 112 MPH
Flaps	Retract
500 ft AGL	24” MP, 2400 RPM

Short Field Landing

(Before Landing Checklist Complete)	
Entry/Downwind	BCGUMPS
Approach slightly steeper than normal	
Downwind -	
MP	15”
Airspeed	115 MPH/100 KIAS
Flaps	10°
Base –	
Airspeed	105 MPH /91 KIAS
Flaps	25°
Final –	
Airspeed	90 MPH/78 KIAS
Flaps	Full
Gear	Check Down
Prop	High RPM
Threshold -	
Airspeed	As per POH
Touchdown	Just above stall speed
Braking	Use max. foot and aerodynamic

Go-Around

Approach	Not Stabilized by 500 ft
Go-Around	Execute
Throttle	Full
Propeller	Forward
Flight Control	Increase Pitch Attitude
Flaps	Retract
Landing Gear	UP after a positive rate of climb and below 125 MPH

Maintain full power until 500 ft AGL then set climb power

Steep Turns

Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18”-22” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Bank	45°
Turn	360°either direction
Roll out	Original heading
Repeat	Other direction

Rectangular Course

Reference	SELECT rectangular area/field
Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18”- 22” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Altitude	800 - 1000 ft AGL
Entry	Downwind 45° ¼ -½ mi away from reference area
Ground Track	Adjust for wind drift to maintain ¼ -½ mi from reference

Turns Around a Point

Reference Point	SELECT
Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18” - 22” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Altitude	800 - 1000 ft AGL
Entry	Downwind ¼ -½ mi from reference point
Ground Track	Adjust for wind drift to maintain ¼ -½ mi from radius

S -Turns Along a Road

Reference Line	SELECT reference line perpendicular to wind
Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18” - 22” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Altitude	800-1000 ft AGL
Entry	Downwind
Ground Track	Adjust for wind drift to maintain ¼ -½ mi from radius

Slow Flight

Clearing turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	15” MP
Propeller	HIGH RPM
Landing Gear	Down
Flaps	Full (in white arc)
Altitude	Maintain
Airspeed	Vso +5
Throttle	18”- 22” MP
Bank	Shallow
Recover using	Go-around procedure

Power Off-Stall

Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	15” MP
Propeller	HIGH RPM
Landing Gear	Down (in white arc)
Flaps	40°
Stabilized Descent	Establish
Throttle	IDLE
Transition to a:	Stall Attitude

Recognize, announce, and recover from stall.

Stall Recovery:

Flight control	Release back pressure
Throttle	FULL
Flaps	Retract to 25°
Altitude	Minimal Loss
Landing Gear	Retract after a positive rate of climb
Airspeed	Accelerate to Vx or Vy before the final flap retraction

Power-On Stall Takeoff Configuration

Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	15” MP
Propeller	HIGH RPM
Landing Gear	Down
Flaps	0° - T/O
Airspeed	80 MPH/69 KIAS
Throttle	24” MAP

Recognize, announce, and recover from stall.

Stall Recovery:

Flight Control	Nose Down
Throttle	Full
Altitude	Minimal Loss
Flaps	Retract
Landing Gear	Retract at positive rate
Airspeed	Accelerate to Vx or Vy

Cross-Controlled Stall

Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	15” MP
Propeller	HIGH RPM
Landing Gear	Down
Flaps	0°
Airspeed	90 MPH
Stabilized Descent	Establish
Transition to a:	Stall Attitude with cross-controls

Recognize, announce, and recover from stall.

Stall Recovery:

Elevator	Forward
Ailerons	Neutral
Throttle	Full
Altitude	Minimal loss
Landing gear	Retract at positive rate
Airspeed	Accelerate to Vx or Vy before the final flap retraction

STEEP SPIRAL

Altitude	Complete (3) 360° turns
Reference Point	SELECT
Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	IDLE
Propeller	HIGH RPM
Airspeed	110 MPH/95 KIAS
Spiral	Max. Bank 60°
Entry	Downwind ½ mi from reference point
Radius	Maintain constant ½ mi
Engine	Clear once each turn on the upwind
Ground Track	Adjust for wind to maintain ½ mi radius

EIGHTS ON PYLONS

Reference Point	Select: 3-5 Sec.
(straight and level flight between pylons)	
Clearing Turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS
Entry	Downwind 45° at Pivotal Alt.
	PA= (GSxKIAS)□ / 11.3
Bank	30° - 40°
Line-of-sight ref. line	MAINTAIN

CHANDELLES

Altitude	Min ALT 1500 AGL
Clearing turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18” MP
Propeller	HIGH RPM
Airspeed	125 MPH/108 KIAS
0° - 90° Point	
Throttle	FULL
Bank	30° Constant
Pitch	Gradually Increase
90° - 180° Point	
Bank	Gradual Rollout
Pitch	Constant
180° point	
Airspeed	5 kts above stall
Bank	0°

LAZY EIGHTS

Altitude	Min ALT 1500 AGL
Clearing turns	COMPLETE
BCGUMPS	COMPLETE
Throttle	18” MP
Propeller	2400 RPM
Airspeed	125 MPH/108 KIAS

(Constant change of pitch and roll rate)

45° Point	Max. Pitch UP, Bank 15°
90° Point	Level. Pitch, Bank 30°
135° Point	Max. Pitch DN, Bank 15°
180° Point	Level Pitch, Bank 0° 125 MPH/108KIAS Entry Altitude

POWER OFF 180° LANDING

Place to Land	Locate
Enter Downwind	1000 ft AGL
MP	15”
Airspeed	115 MPH/100 KIAS
ABEAM	Throttle IDLE
Propeller	HIGH RPM
Airspeed	105 MPH/91 KIAS
Landing Gear	As Required
Flaps	As Required
Landing Assured	90 MPH/78 KIAS
Touchdown	+200 ft/-0 ft

HOLDING

(Begin slowing to holding speed 3 min. prior to reaching fix)

Entry	Select Type
MP	16” - 18”
Airspeed	125 MPH/108 KIAS
Propeller	2400 RPM

NON-PRECISION APPROACH

Airspeed	125 MPH/108 KIAS
MP	16” - 18”
Propeller	2400 RPM

PRECISION APPROACH

Airspeed	125 MPH/108 KIAS
MP	13” - 15”
Propeller	2400 RPM

MISSED APPROACH

Throttle	FULL
Propeller	HIGH RPM
Landing Gear	UP (positive rate, below 125 MPH/108 KIAS)
Airspeed	125 MPH/108 KIAS
Flaps	RETRACT
500 ft AGL	25”MP, 2500 RPM