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flight academy

SOP

Piper 30

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1. TABLE OF CONTENTS

1. TABLE OF CONTENTS3

2. TAKE-OFF BRIEFING5

3. APPROACH BRIEFING.....7

4. INTRODUCTION TO USE OF CHECKLIST9

5. PA-30 CHECKLIST 11

6. PA-30 NORMAL PROCEDURES..... 13

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2. TAKE-OFF BRIEFING

The briefing should describe the departure procedures, taxi routes, power reduction, weather, terrain/MSA, noise abatement procedures, runway in use condition, return alternate airports, NOTAMs and any required operational procedures that differ from the normal procedures. It is recommended to perform the takeoff briefing before engine start.

The following elements shall be included:

- runway for departure and runway conditions;
- specific system handling if any;
- weight limitations;
- SID name with chart number and date of effectiveness;
- normal departure including vertical profile;
- transition altitude;
- action in case of emergency including vertical profile (engine failure before V1 and after V1 must be discussed, also engine fire should be discussed).

Remember:

- You must follow the departure route until a new ATC clearance for a diversion has been received.
- If you plan to perform a circling maneuver check restrictions of this procedure.
- In case of an engine failure or another serious malfunction which significantly increases your workload, ask for radar vectoring whenever such assistance is available.

The takeoff briefing must be carried out aloud. Your crew member must be aware of your intentions. Otherwise, he may have a better idea. If you are alone in the cockpit, a loud briefing will make you really concentrate on it.

The safety of the takeoff preceded by the appropriate briefing is obviously greater. We assume that something unusual may occur, and we are prepared to take an immediate and correct action. We will not be surprised. Most pilots omitting the takeoff briefing assume that everything will go well and they are often helpless when something goes wrong – there is too little time to find a proper solution.

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3. APPROACH BRIEFING

The approach briefing is a review of specific details published on the Instrument Approach Chart.

This briefing can be initiated when the runway in use and the instrument approach procedure is known. However, it should not be started earlier than half an hour before commencement of the approach. The approach briefing is usually divided into four parts in the following order:

- essential information presented on the instrument approach chart;
- setting and use of navigation aids;
- runway length and its lights – especially for airports which you are not familiar with;
- nonstandard configuration.

Essential information shown on the instrument approach chart shall include the following items:

- type of approach, runway in use;
- available frequencies;
- final approach course;
- procedure altitude/glide slope check;
- decision altitude;
- airport elevation;
- vital altitudes, MSA, minimum crossing altitudes, step-down fixes;
- missed approach procedure.

Approach briefing must be carried out aloud. The approach briefing must be carried out in each flight. Even for your home base, which you know by heart. By repeating the approach (e.g. during local training or after missed approach procedure) only the minimum shall be repeated.

Remember:

During the approach briefings always come back and stay on the attitude indicator and monitor the aircraft position. Flying is the first in priority.

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4. INTRODUCTION TO USE OF CHECKLIST

The source document for all procedures contained herein is the approved Airplane Flight Manual and Pilot Operating Handbook. Although sequence of some tasks has been changed no tasks have been omitted according to AFM.

Every checklist should be initiated as early as possible to stay ahead of the airplane and reduce workload of the next phase of the flight/ground preparations.

The basic philosophy for operation of the airplane is to use the checklist as a safety of actions already performed. These are defined by flows and memory items. The overall operating efficiency depends much on the pilot following certain operational patterns and then confirming the correct actions with a suitable checklist. Most ground and in-flight operations are based on this principle.


All items written **BOLD AND CAPITAL LETTERS** should be said aloud.

In the emergency situation, put your action in the following order:

1. FLY THE AIRCRAFT
2. IDENTIFY THE PROBLEM
3. PERFORM MEMORY ITEMS (IF ANY)
4. FIND THE PROPER CHECKLIST
5. EXECUTE IT

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5. PA-30 CHECKLIST

		Piper Twin Comanche PA-30 CHECKLIST																
PREFLIGHT W&B/Performance COMPLETE Documents ON BOARD Ignition and Master Switch OFF Fuel Selector MAIN CELLS Fuel Strainer Sump DRAINED Control Surfaces/Wing/Fuselage .. CHECK Fuel Supply/Cell Caps CHECK Fuel System Vents OPEN Landing Gear Struts CHECK Tires CHECK Cowling/Landing Gear Doors SECURE Oil and Inspection Covers SECURE Propellers CHECK Oil Supply ADEQUATE Leaks ABSENT Windshield CLEAN Dorsal Fin Air Scoop CHECK Control Locks DETACHED Tow Bar STOWED Baggage Door SECURE Cabin Controls OPERATIVE Gear Selector Switch DOWN Stall Warning System CHECK Navigation Lights CHECK Door LOCKED		WORM UP & GROUND CHECK Worm Up at 1000-1400RPM MAX 2'W/4'C AVOID PROLONGED IDLING AT LOW RPM Parking Brake ON Flight Controls CHECK Mixture FORWARD Propeller FORWARD Throttle 1500 RPM Propeller (Not More Than 500) ... EXERCISE Throttle 2200 RPM Magnetos L&R (175/50) Engine Gauges CHECK Vac/Ammeter CHECK Throttle REDUCE Lights/Pitot Heat AS REQUIRED Instruments CHECK/SET Generators ON Fuel Selectors ON MAIN FUEL CELLS Door/Windows LOCK COM/NAV/Lights/Transponder ... SET Flaps/Trim SET Clearance OBTAIN Take Off Briefing COMPLETED																
ENGINE START Master Switch ON Gear Light GREEN Fuel Quantity CHECK Cowl Flaps OPENED Trim Tabs SET Throttles OPEN ½ IN. Propellers controls FORWARD Mixture RICH Fuel Pump ON/PRIME Mixtures IDLE Magneto Switches ON Propellers CLEAR Starters* ENGAGE Mixtures ADVANCE Oil/Fuel Pressure CHECK		LINING UP Parking Brake OFF Fuel Pumps ON Transponder ON/ALT Strobe Lights ON Landing Lights AS REQUIRED																
FLOODED START Magneto Switches ON Throttles OPEN Mixture IDLE Fuel Pump OFF Starters* ENGAGE When engine fires, retard throttle and advance mixture. *Cranking periods should be limited to 30 SECONDS with a 2 MINUTE INTERVAL.		ROLLING Power (Take OFF) SET Man. Press./RPM/Fuel Flow CHECK Speed RISING Accelerate to Vmc Prior Climb 90 MPH																
TAXIING Brakes/Instrument CHECK		AFTER TAKEOFF Gear (Vlo 150MPH) POS. CLIMB/UP Vy 112 MPH Power (Climb) SET Flaps (Vfe 125 MPH) RETRACT Landing Lights OFF Fuel Pumps OFF																
STALL SPEED TABLE (CAS) <table border="1"> <thead> <tr> <th>Bank</th> <th>Gear/Flaps Up</th> <th>Gear/Flaps Down</th> </tr> </thead> <tbody> <tr> <td>0°</td> <td>76</td> <td>69</td> </tr> <tr> <td>20°</td> <td>79</td> <td>71</td> </tr> <tr> <td>40°</td> <td>87</td> <td>79</td> </tr> <tr> <td>60°</td> <td>108</td> <td>98</td> </tr> </tbody> </table> Figures are at gross weight of 3600 pounds with power off.		Bank	Gear/Flaps Up	Gear/Flaps Down	0°	76	69	20°	79	71	40°	87	79	60°	108	98	SHORT & SOFT FIELD TAKEOFF Flaps SET FOR T/O Brakes SET Power MAXIMUM Instruments CHECK If airborne before Vmc fly low level to reach Vmc 90MPH. Before Vmc be ready to reduce power promptly. Vx 90 MPH Landing Gear RETRACT Vy (clear of obstacle) 112 MPH Flaps RETRACT	
Bank	Gear/Flaps Up	Gear/Flaps Down																
0°	76	69																
20°	79	71																
40°	87	79																
60°	108	98																
©2014 Smart Aero Service/KF		CLIMB Throttles/Props SET CLIMB Enroute Climb 130 MPH																
		CRUISE Throttles-Props SET/TABLE Mixture ADJUST Tanks AS NEEDED Instruments AS NEEDED																
		Under ONE Engine Flight Conditions Maintain IAS ABOVE 97 MPH																

Piper Twin Comanche PA-30 CHECKLIST

APPROACH/LANDING

ATIS/AWOS/ASOS..... OBTAIN
 Brief/Seat Belts..... CHECK
 Mixture..... RICH
 Props..... 2400 RPM
 Fuel Pumps..... ON
 Fuel Selectors **ON MAIN FUEL CELLS**
 Landing Lights..... AS REQUIRED
 Gear (Vlo 150MPH)..... GREEN
 Flaps (Vfe 125 MPH)..... SET
 Final Approach..... 100 MPH

GO AROUND

Power..... FULL
 Gear (Positive Climb)..... UP
 Flaps..... RETRACT SLOW
 Vy..... 112 MPH

MANUAL GEAR EXTENSION

Master/Gear Circuit Breakers..... IN
 Master..... ON
 Navigation Lights..... OFF Day
 Emergency Disengage Control..... REMOVE COVER
 Airspeed..... 100 MPH
 Landing Gear Switch..... OFF
 Disengage Motor..... FULL FORWARD
 Gear Extension Handle **R Socket**.. FULL FORWARD
 Gear Extension Handle **L Socket**.. FULL FORWARD
 Gear Lights..... GREEN
DON'T RETRACT WITH HANDLE IN SOCKET
DON'T RE-ENGAGE MOTOR IN FLIGHT

AFTER LANDING

Flaps..... RETRACT
 Cowl Flaps..... OPEN
 Fuel Pumps..... OFF
 Props..... FORWARD
 Transponder..... STBY
 Strobe/Landing Lights..... OFF

COMPLETE STOP

Radio/Elec. Equip..... OFF
 Heater..... OFF
 Mixture/Ignition/MASTER..... OFF
 Parking Brake..... ON
 Chocks/Chains/Papers..... COMPLETE

• CLOSE FLIGHT PLAN

LOST COM

Check: Freq., Volume, Squelch, Phones
 Transponder..... 7600
 Pattern..... Enter/Lights

**Under ONE Engine Flight Conditions
 Maintain IAS ABOVE 97 MPH**

ENGINE FAILURES

During Take Off or After Lift Off

During Run..... STOP
 After Lift Off With Adequate Landing Distance..... LAND

During Climb After Take Off

Vyse..... 105 MPH
 Mixture/Props/Throttles..... FORWARD
 Flaps..... UP
 Gear..... DECIDE

IDENTIFY DEAD ENGINE

Propeller (Dead Engine)..... FEATHER
 Rudder Trim..... USE

RETURN TO AIRPORT FOR LANDING

During Cruise Flight

Mixture/Props/Throttles..... ADVANCE

IDENTIFY DEAD ENGINE

Rudder Trim..... USE
 Cause Of Engine Failure..... DETERMIN
 Propeller (Dead Engine)..... FEATHER
 Mixture (Dead Engine)..... IDE/CUT OFF
 Ignition (Dead Engine)..... OFF
 Operating Engine..... SET POWER
 Electrical Load..... REDUCE

SINGLE ENGINE APPROACH

Power..... REDUCE
 Rudder Trim..... USE
 Reaching Airport..... ASSURED
 Gear..... DOWN
 Additional Altitude/Speed..... MAINTAIN
 Final Approach Speed..... 105 MPH
 Flaps..... AVOID
 Go Around...FLAPS/GEAR..... UP

FEATHERING POSSIBLE OVER 1000 RPM

UNFEATHERING

Ignition..... ON
 Mixture..... RICH
 Throttle..... OPEN ½ IN.
 Prop..... CRUISE
 Starter..... ENGAGE
 Power 1000-1500 rpm Until Oil Temp Rise

DON'T FEATHER A PROP FOR PRACTICE:

- if you think engine may be difficult to start
- at a low altitude AGL
- with a low charged battery
- unless you are within reasonable distance of an airport
- in conditions that may prevent single engine flight at altitude well above the ground

Power Setting Table	Press. Alt. 1000ft	88HP – 55% RPM AND MAN. PRESS				104HP – 65% RPM AND MAN. PRESS				120HP – 75% RPM AND MAN. PRESS		
		2100	2200	2300	2400	2100	2200	2300	2400	2200	2300	2400
		SL	22.4	21.7	21.0	20.4	25.0	24.2	23.3	22.7	26.5	25.6
2	21.8	21.2	20.5	19.9	24.4	23.6	22.8	22.2	25.9	25.0	24.3	
4	21.3	20.6	19.9	19.4	23.8	23.0	22.2	21.6	25.3	24.3	23.7	
6	20.8	20.1	19.4	18.9	23.2	22.4	21.6	21.1	FT	FT	23.1	
8	20.2	19.5	18.9	18.4	FT	21.8	21.0	20.5	---	---	FT	
10	19.7	19.0	18.3	17.9	---	FT	FT	20.0	This product is not a substitute for any operation manual.			
12	FT	18.4	17.8	17.4	---	---	---	FT	©2014 Smart Aero Service/KF			
14	---	FT	FT	16.9	---	---	---	---				
V SPEEDS (MPH)	Vmc	90	Vx	90	Vfe	125	Vne	205	GPH TOTAL	65%	15.2	
	Vyse	105	Vy	112	Vlo	150	Crosswind	20		75%	17.2	

Page 12

PIPER 30

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6. PA-30 NORMAL PROCEDURES

Takeoff

Lining up

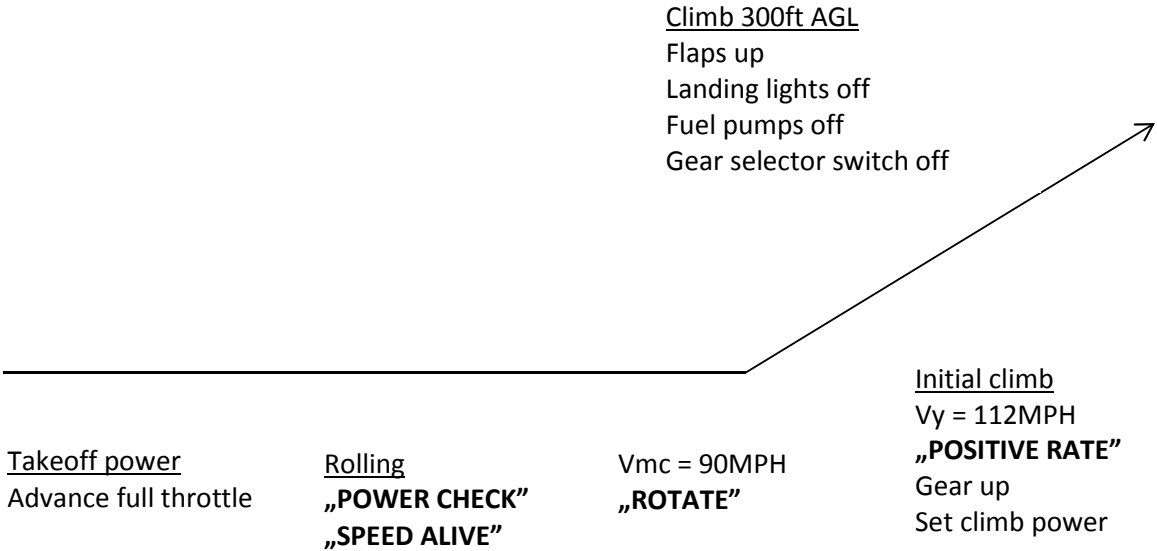
- Parking Brake..... OFF
- Fuel Pumps ON
- Transponder ON/ALT
- Strobe Lights..... ON
- Landing Lights..... AS REQUIRED

Rolling

- Power (Take OFF) SET
- Man. Press./RPM/Fuel Flow CHECK
- Speed..... RISING
- Accelerate to Vmc Prior Climb 90 MPH

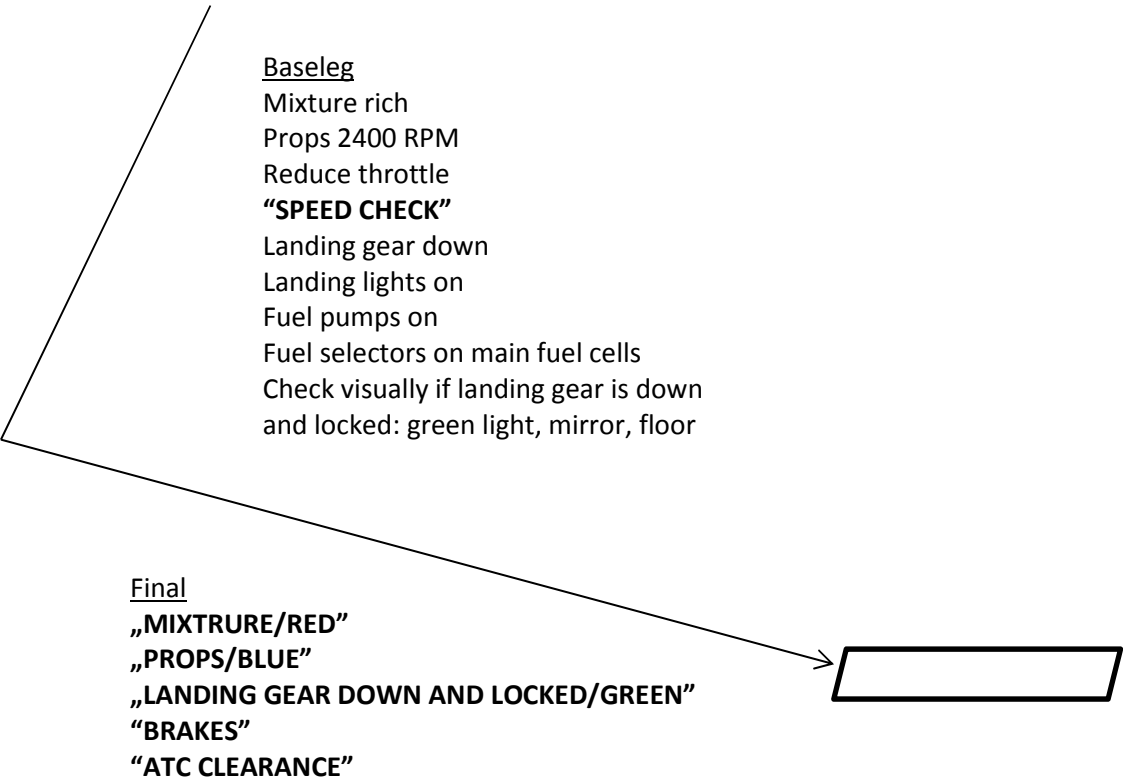
After takeoff

- Gear (Vlo 150MPH)..... POS. CLIMB/UP
- Vy 112 MPH
- Power (Climb) SET
- Flaps (Vfe 125 MPH) RETRACT
- Landing Lights..... OFF
- Fuel Pumps OFF



Approach/landing

- ATIS/AWOS/ASOS.....OBTAIN
- Brief/Seat Belts.....CHECK
- Mixture.....RICH
- Props..... 2400 RPM
- Fuel PumpsON
- Fuel Selectors **ON MAIN FUEL CELLS**
- Landing Lights..... AS REQUIRED
- Gear (Vlo 150MPH).....GREEN
- Flaps (Vfe 125 MPH).....SET
- Final Approach.....100 MPH

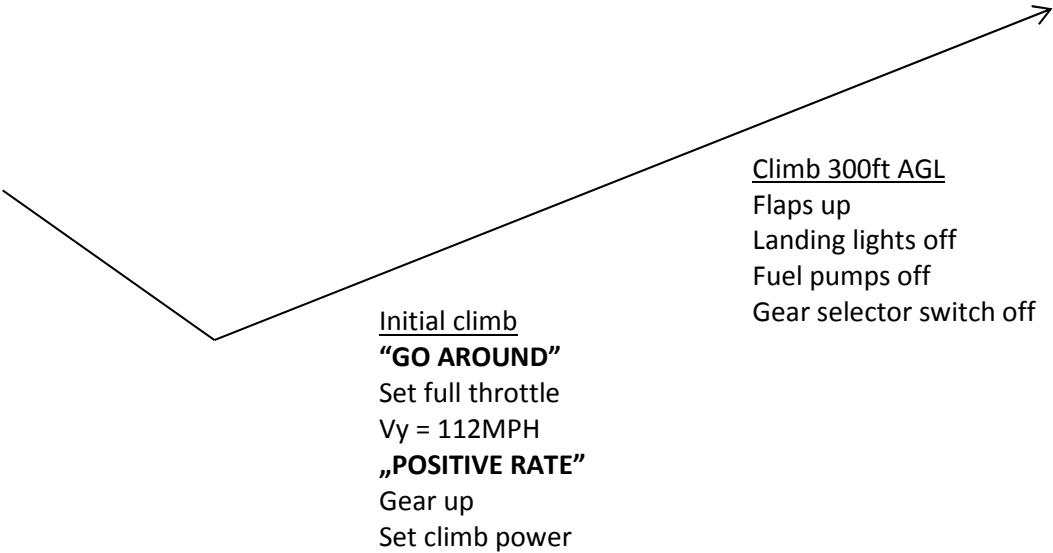


A simple last-minute check on final should confirm that:

- power is set;
- landing gear is down and locked;
- brakes are released (check if feet are only on the bottom side of pedals);
- ATC clearance is obtained.

Balked landing

- Power FULL
- Gear (Positive Climb) UP
- Flaps..... RETRACT SLOW
- Vy..... 112 MPH



NOTE

- Experience indicates that retracting the landing gear during an operational VFR go-around, when immediate landing is contemplated, has been conducive to gear up landings
 - **ALWAYS FOLLOW THE BEFORE LANDING CHECKLIST**

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