



Piper Apache PA-23-180 N2018P

Normal Procedures Checklist

PREFLIGHT

Cabin

Hobbs & Tach Times	CHECK
Required Documents	AROW
Throttles	IDLE
Propeller Controls.....	FULL FORWARD
Mixture Controls	IDLE CUT-OFF
Master Switch & Magneton	OFF
Gear Handle	NEUTRAL
Flaps	HANDLE DOWN, Pump DOWN
Trim.....	NEUTRAL
Avionics Power Switch.....	OFF
Master Switch.....	ON

WARNING

When turning on Master Switch, using external power or pulling prop through by hand; treat prop as if ignition were on. DO NOT STAND or allow anyone else to stand in the arc of the propellers.

Landing Gear Lights	3-GREEN
Fuel Quantity.....	CHECK
External Lights.....	CHECK
Master Switch.....	OFF
Crossfeed.....	DRAIN
Ignition Switches (Magneton)	ENSURE OFF
Fuel Selectors	CHECK ON MAINS

Right Wing

Flap & Aileron.....	CHECK
Wing Tip & Lights	CHECK
Aux Fuel Tank (Outboard)	CHECK
Main Fuel Tank.....	CHECK
Fuel Vents	CHECK
Tiedown	REMOVE
Fuel Drain	SUMP
Main Gear,	CHECK
Tire (35PSI), Strut (3½ In.) & Brake	

Right Engine

Oil (6-8qts.).....	CHECK
Cowling	SECURE
Propeller & Spinner	CHECK
Alternator Belt.....	CHECK

Nose

Windscreen	CLEAN
Nose Section.....	CHECK
Nose Gear.....	CHECK
<i>Tire (27PSI), Strut (2 ½ In.), Door</i>	
Fwd. Baggage Compartment..	CHECK, DOOR SECURE
Landing Light.....	CHECK
Air Intake.....	CHECK

Left Engine

Oil (6-8qts.).....	CHECK
Cowling	SECURE
Propeller & Spinner	CHECK
Alternator Belt.....	CHECK

Left Wing

Main Gear,	CHECK
<i>Tire (35PSI), Strut (3 ½ In.) & Brake</i>	
Fuel Drain	SUMP
Tiedown	REMOVE
Main Fuel Tank.....	CHECK
Aux Fuel Tank	CHECK
Pitot Tube.....	REMOVE COVER & CHECK
Fuel Tank Vents	CHECK
Wing Tip & Lights	CHECK
Aileron & Flap.....	CHECK

Fuselage/Empennage

Left Static Port.....	CLEAR
Elevator & Rudder	CHECK
Tiedown	REMOVE
Position & Beacon Lights.....	CHECK
Right Static Port	CLEAR
Antennas.....	CHECK

PREFLIGHT INSPECTION COMPLETE

Before Starting Engines

Preflight.....	COMPLETE
Passenger Brief.....	COMPLETE
Seats, Belts, & Shoulder Harnesses	ADJUSTED & SECURE
Fuel Selector Valves.....	MAIN TANKS
Crossfeed	OFF
Heater	OFF
Elevator & Rudder Trim	NEUTRAL
Alternators.....	ON
Avionics Master	OFF

CAUTION

Avionics Power switch must be OFF during engine start to prevent possible damage to avionics.

Brakes.....	TEST & SET
Circuit Breakers.....	CHECK IN
Beacon.....	ON

STARTING ENGINES

Cold Start

Mixture Controls	RICH
Propeller Controls.....	FULL FORWARD
Carb Heat.....	OFF, COLD
Prime .. AS REQ'D (2-6 Strokes cold engine) & LOCKED	
Throttles	¼ INCH OPEN
Magneton	ON
Master Switch.....	ON
Boost Pumps.....	ON (one at a time)
First (LEFT) Engine:	
Mixture	RICH
Prop Area.....	CLEAR!
Starter Switch.....	TOGGLE TO SELECTED ENGINE
Engine Idle	1000 RPM
Oil Pressure	CHECK (W/I 30 secs)
Boost Pump	OFF
Mixture	LEAN for TAXI
Repeat for Second (RIGHT) Engine	
Flaps	UP

Hot Start

Mixture Controls	RICH
Propeller Controls.....	FULL FORWARD
Throttles ¼ INCH OPEN
Magneton	ON
Master Switch.....	ON
Boost Pumps.....	ON
First (LEFT) Engine:	
Mixture	RICH
Prop Area.....	CLEAR!
Starter Switch.....	TOGGLE TO SELECTED ENGINE
Oil Pressure	CHECK (W/I 30 secs)
Engine Idle	1000 RPMs
Boost Pump	OFF
Mixture	LEAN for TAXI

Repeat for Second (RIGHT) Engine

Flooded Start

Mixture Controls	IDLE CUT-OFF
Propeller Controls.....	FULL FORWARD
Throttle.....	FULL OPEN
Magneton	ON
Master Switch.....	ON
Boost Pumps.....	OFF
Engine:	
Prop Area.....	CLEAR!
Starter (<i>Selected Engine</i>)	PUSH
As Engine Starts – MIXTURE FORWARD &	
THROTTLE BACK	
Oil Pressure	CHECK (W/I 30 secs)
Engine Idle	1000 RPMs
Mixture	LEAN for TAXI

Starting with External Power

Master Switch.....	OFF
- <i>Insert Plug of Jumper Cable into Fuselage</i>	
Master Switch.....	ON
Execute Normal Start	
Master Switch	OFF before removing Jumper
Master Switch	ON
Alternators.....	ON

CAUTION

Do not attempt flight if there is no indication of alternator output.

Perform normal start for Second Engine

After Start

Both engines running & both alternators on	
Alternator(s)	CYCLE OFF then ON <i>(Ensure each can pick up Electrical Load)</i>
Avionics Master Switch	ON
Radios & GPS	SET
ATIS/AWOS	RECORD
Instruments	CHECK & SET
Taxi Clearance	OBTAIN
Nav Lights	ON (Night Only)

TAXI CHECK

Brakes.....	CHECK
Nose Wheel Steering.....	CHECK
Flight Instruments.....	CHECK

BEFORE TAKEOFF

Before Takeoff

Brakes.....	SET
Flight Controls	FREE & CORRECT
Trim.....	CHECK & SET TAKEOFF

Engine Run-Up

Fuel Selector Valves.....	MAIN TANKS
Crossfeed.....	OFF
Primers.....	IN & LOCKED
Mixtures	FULL RICH
Throttles	2000 RPM
Magneton	CHECK (125 max; 75Diff)
Props	CYCLE 3 TIMES
<i>(1 engine at a time; RPM Drop(100-200RPM) Do not allow RPM to drop below 1500 when cycling, MP rise & Oil Press. Movement)</i>	
Engine Instruments.....	CHECK
Alternator Output	CHECK
Vacuum.....	CHECK (5.0±0.1 psi)
Left & Right Carb Heat.....	ON
Throttles	IDLE CHECK
Carb Heat(s).....	OFF
Throttles	1000 RPM
Mixtures	FULL RICH
Props	FULL FORWARD
Throttle Friction	SET
Transponder.....	ALT
Comm & Nav Radios	SET

Flight Instruments	CHECK & SET
Departure	BRIEF
Emergency Procedures	REVIEW

Engine Failure Before Rotation	ABORT
Engine Failure Before Gear UP	
THROTTLES IDLE; LAND STRAIGHT AHEAD	
Engine Failure Insufficient Runway	
1. MAINTAIN DIRECTIONAL CONTROL PITCH FOR BLUE LINE – 95 MPH	
2. MIXTURES, PROPS, THROTTLES – FULL FORWARD	
3. FLAPS	UP
4. GEAR	UP
5. IDENTIFY, VERIFY, FEATHER	
a. Identify	DEAD FOOT, DEAD ENGINE
b. Verify	CLOSE THROTTLE
c. Feather	PROP TO FEATHER
d. Mixture	IDLE CUT-OFF
e. DECLARE EMERGENCY & LAND	
6. Inadequate Climb Performance	
.....	
THROTTLE BACK & LAND STRAIGHT AHEAD	
WITH GEAR DOWN WHEN ABLE	

Landing Light	ON
Nav Lights	ON (<i>Night Only</i>)
Strobe Lights	ON
Pitot Heat	AS REQUIRED
Boost Pumps	ON
Carb Heat	CHECK OFF

Hold Short Check

Takeoff Time	RECORD
Cabin Doors & Window	SECURED
Final Approach	CLEAR

TAKEOFF

Normal Takeoff

Taxi.....	INTO POSITION & STOP
Brakes.....	HOLD
Throttles	2000 RPM
Engine Instruments.....	CHECK
Brakes.....	RELEASE
Throttles	FULL POWER
Rotate	75-80 MPH
Positive Rate	GEAR UP

Short Field Takeoff (Flaps Up)

Use all available runway

Flaps	UP
Brakes.....	HOLD
Throttles	2000 RPM
Engine Instruments.....	CHECK
Throttles	FULL POWER
Brakes.....	RELEASE
Rotate	77 MPH
Positive Rate	GEAR UP
Climb Thru 50'	87 MPH (V_x)

CLIMB

Landing Gear.....	UP
Climb Speed.....	100 (V_y)
Power.....	25" MP & 2500 RPM
Boost Pumps.....	OFF, 1000' AGL (One at a Time!)
Landing Light.....	OFF
Alternators.....	CHECK
Engine Instruments.....	CHECK

ENROUTE CLIMB

Climb Speed.....	100-120 MPH
Throttles	25" MP
Mixtures	LEAN AS NECESSARY

CRUISE

Power.....	20-22" MP & 2400 RPM
Mixtures	LEAN (As Required)
Trim.....	SET
Lights	AS REQUIRED
Heading Indicator	CHECK

SWITCH TANKS

Note: Select MAIN TANKS during climbs & descents

Boost Pumps.....	ON
Fuel Selector Valves.....	MAIN or AUXILIARY
Boost Pumps.....	OFF (1 at a Time)

DESCENT

Power.....	SET (2400 RPM – 16" M.P.)
Seats, Belts & Harnesses	SECURE
Boost Pumps.....	ON
Fuel Selector Valves.....	MAIN TANKS
Mixtures	ENRICHEN
Pitot Heat	AS REQUIRED
Landing Light.....	ON

LANDINGS

(Downwind - 105; Base - 95; Final – 90)

Normal Landing

Mid Field Downwind

Gear.....	DOWN (Below 125 MPH)
"3 Green, 1 in the Mirror"	
Mixtures	FULL RICH
Props	FULL FORWARD
Carb Heat.....	AS REQUIRED
Flaps	SET
Touchdown.....	MAIN WHEELS FIRST
Rollout	LOWER NOSE & BRAKE

Short Field Landing

Gear.....	DOWN (Below 125 MPH)
"3 Green, 1 in the Mirror"	
Mixtures	FULL RICH
Props	FULL FORWARD
Carb Heat.....	AS REQUIRED
Flaps	FULL DOWN 40°
Approach Speed.....	87 MPH
Touchdown.....	MAIN WHEELS FIRST
Throttles	IDLE
Control Wheel.....	APPLY BACK PRESSURE
Brakes.....	APPLY

GO AROUND (BALKED Landing)

Mixtures, Props, & Throttles..... FULL FORWARD
Flaps UP
Positive Rate GEAR UP

TAXI BACK FOR TAKEOFF

Clear of Runway

Trim..... SET for TAKEOFF
Flaps UP
Mixtures LEAN for TAXI
Fuel Pumps..... OFF for TAXI
Lights AS REQUIRED

Holding Short

Mixtures FULL RICH
Fuel Pumps..... ON
Lights ON as REQUIRED

AFTER LANDING (Taxi to Park)

Taxi..... CLEAR OF RUNWAY
Flaps UP
Mixtures LEAN FOR TAXI
Transponder..... STBY or GND
Landing Light..... ON for TAXI at NIGHT
Wing Strobes..... OFF
Heater Switch..... OFF
Boost Pumps..... OFF

ENGINE SHUTDOWN & SECURE AIRPLANE

Avionics Master OFF
Throttles 1000 RPM
Props ENSURE FULL FORWARD
Mixtures IDLE CUT-OFF
Electrical & Lights..... OFF
Magnetos OFF
Alternators..... OFF
Master Switch..... OFF
Hobbs & Tach Times RECORD
Sunshades INSTALL
Personal Items & Trash REMOVE
Pitot Cover & Tiedowns INSTALL

HEATER OPERATION

(Ground - Engines Running)

Heater Fuel Valve..... ON
Heater Switch..... HIGH or LOW HEAT

If heater does not start promptly

Heater Switch..... TURN TO PRIME (15 secs.)
Heater Switch HIGH HEAT

Heater should start & operate after 1½ mins warmup
Front & Rear Cabin Air Knobs.....ADJUST

Heater Shutdown

Heater Switch..... OFF 2 mins. Before Shutdown
Combustion will stop but fan& circulating air will continue for up to 2 minutes.

GENERAL SPECIFICATIONS (Speeds MPH)

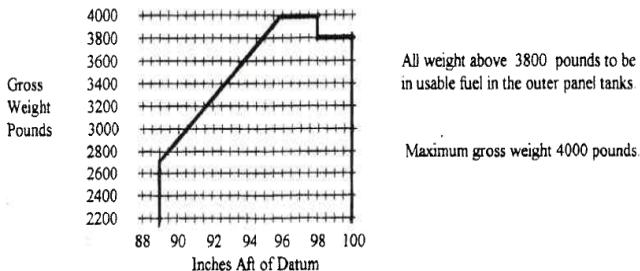
Tire Pressure Mains	27 psi
Tire Pressure Nose	35 psi
Max Takeoff Weight	4000 lbs.
Max Landing Weight	3800 lbs.
Max Zero Fuel Weight.....	3800 lbs.
Max. Wt. Fwd. Baggage.....	25 lbs.
Max. Wt. Rear Baggage.....	30 lbs.
Max X-W Landing.....	15 MPH (13 Kts.)
Opt. Cruise TAS 75% 6000 ft.	171
Cruise Speed TAS 65% 9000 ft.	163
Electrical system	12 Volt
Vacuum @ 2000 rpm	5.0±0.1
Oil Temps	75° – 245°F
Oil Quantity	6 – 8 qts
Fuel	100 LL
Fuel Capacity..	108 Gal
Unusable Fuel	5 Gal
Engines	O-360-A1D
Horsepower	180 HP @ 2700 RPM
V _{so}	55
V _s	60
V _{MC} (Red Line)	84
V _R	77
V _x	87
V _{xSE}	90
V _y	100
V _{ySE} (Blue Line)	95
V _{FE}	125
V _{LE} Gear Up.....	125
V _{LO} Gear Down.....	125
V _A	130
V _{NO}	180
V _{NE}	227

Apache Modification Aircraft Corp.
1893 Airport Road
Kalispell, Montana 59901

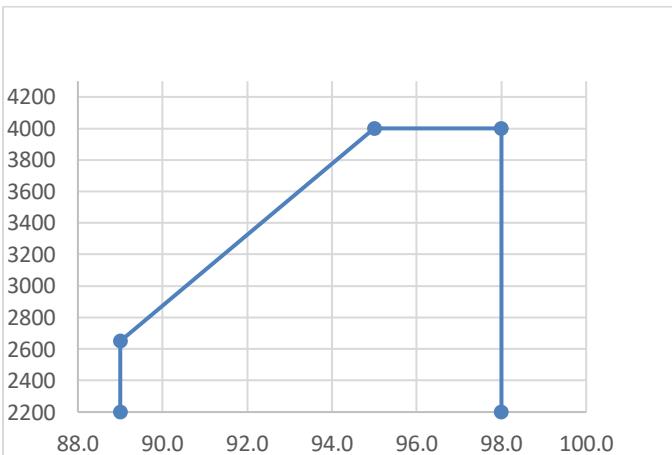
Supplement 6
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FAA Approved Airplane Flight Manual Supplement for Piper PA-23 STC SA899SW

Weight / C.G. :



Weight & Balance Envelope for N2018P



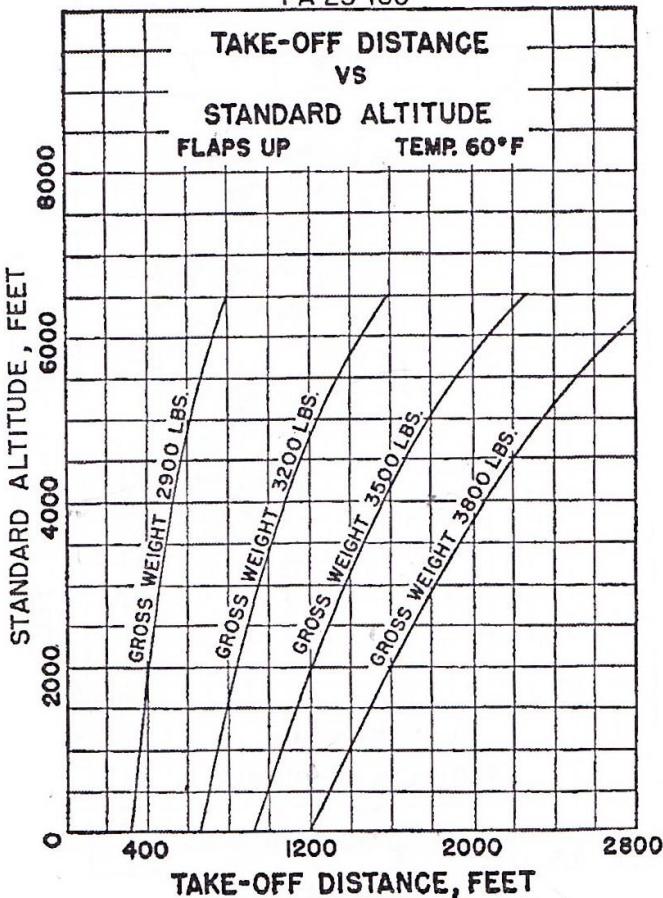
Weight & Balance Envelope for N4462P

Both Aircraft have been modified IAW STC SA899SW with improved wing spar allowing for Max Gross Weight of 4000 lbs

Zero Fuel weight for both aircraft is 3800 lbs.

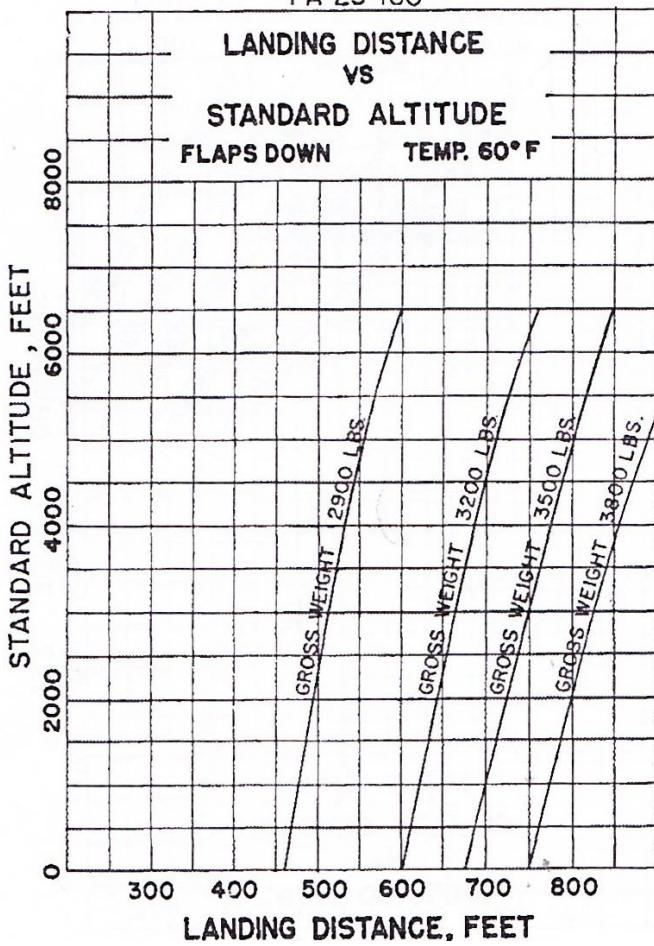
Max Landing weight is 3800 lbs.

PA-23-160

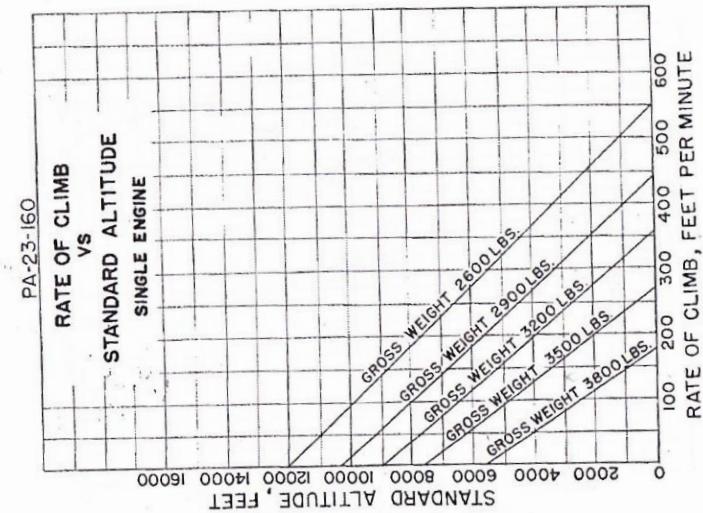
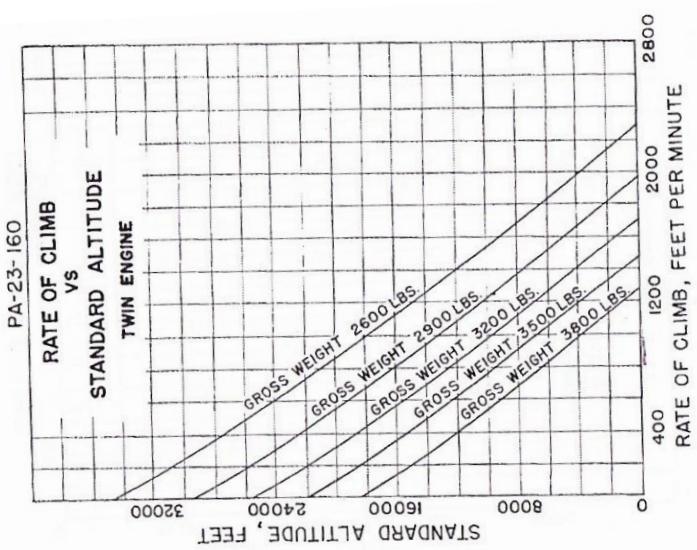


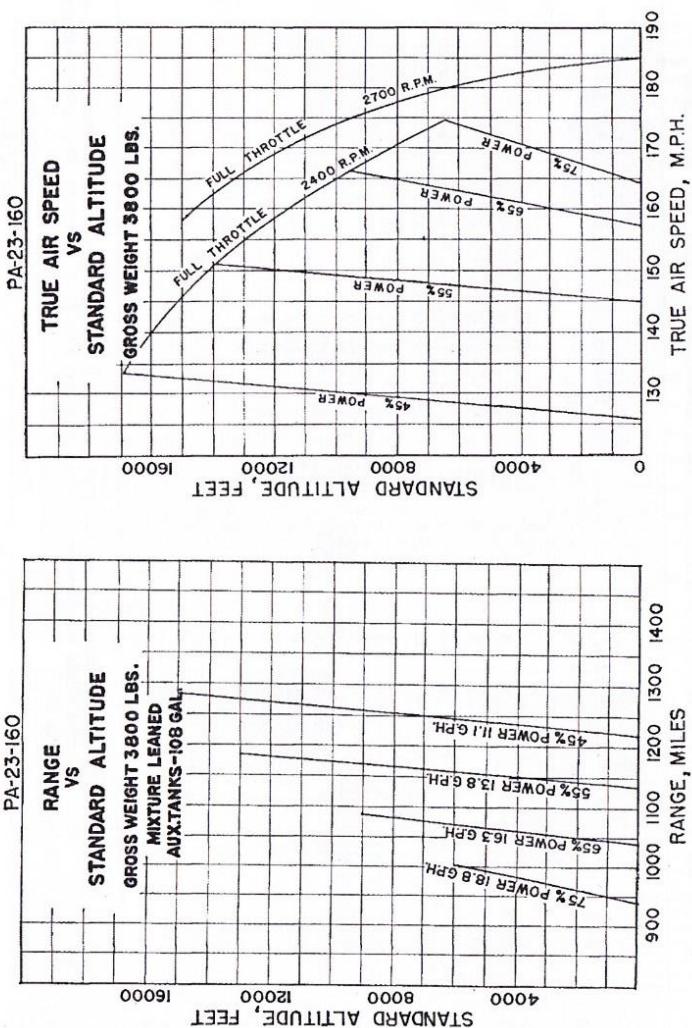
For Takeoff Distance over a 50-foot obstacle add 650 feet to takeoff roll.

PA-23-160



For Landing distance over a 50-foot obstacle, add 675 feet to the landing roll.





DATA MEASURED and/or EXTRAPOLATED
FROM PERFORMANCE OF GERONIMO
N4275P — OTHER AIRCRAFT MAY VARY

PA-23 - 180 /SC

POWER SETTING TABLE

O-360-A1D

180 HP.

Press. Alt. Feet	Std. Alt Temp °F	99 HP - 55% Rated RPM AND MAN PRESS				117 HP - 65% Rated RPM AND MAN PRESS				135 HP - 75% Rated RPM AND MAN PRESS			
		21,000	22,000	23,000	24,000	21,000	22,000	23,000	24,000	22,000	23,000	24,000	25,000
SL	59	21.2	20.7	20.2	19.7	24.0	23.4	22.9	22.2	26.0	25.4	24.1	SL
1,000	55	21.0	20.5	20.0	19.5	23.8	23.2	22.5	22.0	25.8	25.1	24.5	1,000
2,000	52	20.7	20.3	19.7	19.3	23.5	22.9	22.3	21.8	25.5	24.8	24.2	2,000
3,000	48	20.5	20.0	19.5	19.1	23.2	22.7	22.0	21.5	25.3	24.6	24.0	3,000
4,000	45	20.3	19.8	19.3	18.9	23.0	22.5	21.8	21.3	25.1	24.3	23.6	4,000
5,000	41	20.0	19.6	19.1	18.6	22.7	22.2	21.6	21.1	24.7	23.1	23.5	5,000
6,000	38	19.8	19.4	18.9	18.4	22.5	22.0	21.3	20.9	—	21.1	23.5	6,000
7,000	34	19.6	19.2	18.7	18.2	22.0	21.6	21.1	20.7	—	21.3	23.5	7,000
8,000	31	19.3	18.9	18.4	18.0	FT	21.5	20.9	20.5	—	—	—	8,000
9,000	27	19.1	18.7	18.2	17.8	—	FT	20.6	20.3	—	—	—	9,000
10,000	23	18.9	18.5	18.0	17.6	—	—	—	—	—	—	—	10,000
11,000	19	18.6	18.3	17.8	17.4	—	—	—	—	—	—	—	11,000
12,000	16	18.4	18.1	17.6	17.2	—	—	—	—	—	—	—	12,000
13,000	12	FT	17.8	17.4	17.0	—	—	—	—	—	—	—	13,000
14,000	9	—	FT	17.1	16.8	—	—	—	—	—	—	—	14,000
15,000	5	—	—	FT	FT	—	—	—	—	—	—	—	15,000

To maintain constant power, correct manifold pressure approximately 0.17" HG for each 10°F variation in carburetor air temperature from standard altitude temperature. Add manifold pressure for air temperatures above standard; subtract for temperatures below standard.