

PIPER APACHE N164YF NORMAL CHECKLIST

BEFORE START CHECK

PRE-FLIGHT ----- COMPLETE
 WEIGHT & BALANCE ----- COMPLETE
 CABIN DOORS ----- CLOSED & LATCHED
 PASSENGER BRIEF ----- COMPLETE
 SEATBELTS/HARNESSES ----- ADJUSTED/LOCKED
 CIRCUIT BREAKERS ----- CHECKED
 FUEL SELECTORS ----- MAIN
 CROSS FEED ----- OFF
 LANDING GEAR HANDLE ----- CENTERED
 ELECTRICAL EQUIPMENT ----- OFF
 MASTER SWITCH ----- ON
 FUEL GAUGES ----- CHECKED
 BEACON ----- ON
 LANDING GEAR POSITION LIGHTS ----- 3 GREEN

ENGINE START CHECK

ALTERNATORS ----- ON
 MIXTURE CONTROLS ----- FULL RICH
 PROPELLERS ----- FULL FORWARD
 THROTTLES ----- OPEN 1/8 INCH
 FUEL PUMP--BOTH ON (UNTIL FUEL PRES THEN) OFF
 BRAKES ----- SET & HOLD
 PROP AREA ----- CLEAR

MAGNETO SWITCHES ----- ALL 4 ON
 PRIME ----- AS REQUIRED
 STARTER ----- ENGAGE, 5S MAX
 OIL PRESSURE ----- CHECK INCREASING/GREEN 30s
 MIXTURE ----- GROUND LEAN
 AMMETER ----- CHARGING

REPEAT 2nd ENGINE

TAXI CHECK

FLAPS ----- UP
 AVIONICS MASTER/AVIONICS ----- ON
 BRAKES ----- CHECK
 DG/TURN-COORDINATOR ----- CHECK ON

ENGINE RUN UP

BRAKES ----- SET & HOLD
 FLIGHT CONTROLS ----- FREE & CORRECT
 TRIM ----- TAKEOFF
 MIXTURE CONTROL ----- FULL RICH
 PROPELLERS ----- FULL FORWARD
 THROTTLE (1 AT A TIME) ----- 2000RPM
 PROPELLER CYCLE ----- CHECK
 OIL PRESSURE / TEMP ----- CHECK
 SUCTION ----- CHECK
 CARB HEAT ----- CHECK
 MAGNETOS ----- 125 MAX, 50 DIFFERENCE
 AMMETER ----- CHARGING
 THROTTLE ----- <1000 RPM

REPEAT 2nd ENGINE

PIPER APACHE N164YF NORMAL CHECKLIST

BEFORE TAKEOFF CHECK

FLIGHT INSTRUMENTS, RADIOS ----- SET
 FUEL SELECTORS/PRIMERS/X-FEED - SET/LOCKED/OFF
 FLAPS ----- UP
 MIXTURES ----- FULL RICH/SET FOR ALTITUDE
 PROPELLERS ----- FULL FORWARD
 TRANSPONDER ----- SET
 CABIN HEATER ----- OFF
 LANDING LIGHT ----- ON
 FUEL PUMPS ----- ON
 PARKING BRAKE ----- OFF
 TAKEOFF/DEPARTURE BRIEF ----- COMPLETE

TAKEOFF

MIXTURE/PROPS ----- FULL FORWARD
 THROTTLES ----- FULL POWER
 ROTATE ----- 77
 LANDING GEAR---- (Positive ROC/No Runway Remain)
 GEAR UP

CLIMB CHECK (1000FT AGL)

THROTTLES/PROPS ----- 24" MP, 2400RPM
 AIRSPEED (Cruise Climb) ----- 110 - 120MPH
 MIXTURES ----- LEAN ABOVE 3,000 FT
 ENGINE GAUGES ----- CHECK GREEN
 FUEL PUMPS ----- OFF(ONE AT A TIME)
 LANDING LIGHT ----- AS REQUIRED

CRUISE CHECK

THROTTLES ----- 16"-24"
 PROPELLERS ----- 2400RPM
 MIXTURES ----- LEAN ABOVE 3,000 FT
 FUEL PUMPS ----- CHECK OFF

DESCENT CHECK

WEATHER / ALTIMETER ----- CHECKED / SET
 MIXTURES ----- ENRICH
 CARB HEAT / POWER ----- AS NEEDED

BEFORE LANDING CHECK

FUEL SELECTORS and CROSS FEED ----- MAINs and OFF
 LANDING GEAR ----- DOWN (BELOW 125)
 MIXTURES ----- FULL RICH
 PROPELLERS ----- FULL FORWARD
 FUEL PUMPS ----- ON
 LANDING LIGHT ----- ON
 CABIN HEATER ----- OFF
 DOOR SEAL ----- OFF
 SEATBELTS / HARNESSES ----- SET

AFTER LANDING CHECK

FUEL PUMPS ----- OFF
 LANDING LIGHT ----- OFF
 MIXTURE ----- GROUND LEAN
 FLAPS ----- UP
 TRIM ----- TAKEOFF

SHUTDOWN CHECK

AVIONIC MASTERS, ELECTRICAL SWITCHES ----- OFF
 THROTTLES ----- IDLE
 MIXTURES ----- IDLE CUTOFF
 MAGNETOS and MASTER SWITCH ----- OFF
 ASPEN PFD ----- OFF (HOLD REV BUTTON)

PIPER APACHE N164YF EMERGENCY CHECKLIST

ENGINE FIRE (GROUND)

MIXTURE CONTROLS ----- IDLE CUTOFF
CONTINUE CRANKING AFFECTED ENGINE
 FUEL SELECTORS ----- OFF
 FUEL PUMPS ----- OFF
 MASTER SWITCH ----- OFF

ENGINE FAILURE DURING GROUND ROLL

THROTTLES ----- IDLE
 BRAKES ----- AS NEEDED
 MIXTURES ----- IDLE CUTOFF IF FIRE SUSPECTED

ENGINE FIRE INFLIGHT, OR PRECAUTIONARY SHUTDOWN

FUEL SELECTOR (AFFECTED ENGINE) ----- OFF
 CROSSFEED ----- OFF
 PRIMERS ----- IN and LOCKED
 MIXTURE (AFFECTED ENGINE) ----- OFF
 PROPELLER (AFFECTED ENGINE) ----- FEATHER
 FUEL PUMP (AFFECTED ENGINE) ----- OFF
 MAGNETOS (AFFECTED ENGINE) ----- OFF(1 BY 1)

MANUAL GEAR EXTENSION

GEAR HANDLE ----- DOWN
 ELECTRIC PUMP ----- ACTIVATE (OR)
 HAND PUMP ----- PULL OUT & PUMP
(40-50 PUMPS FOR GEAR OPERATION)

CO2 GEAR EXTENSION

GEAR HANDLE ----- DOWN
 CO2 GEAR EXTENSION RING ----- PULL
****WARNING DO NOT TRY TO RETRACT THE GEAR
 AFTER
 CO2 EMERGENCY EXTENSION IS USED****

AIRSPEDS FOR SAFE OPERATION (MPH)

PIPER APACHE N164YF EMERGENCY CHECKLIST

ENGINE FAILURE

MIXTURES / PROPS / THROTTLES ----- FULL FORWARD
 CLEAN-UP ----- FLAPS/GEAR UP, FUEL PUMPS ON
 IDENTIFY ----- DEAD FOOT, DEAD ENGINE
 VERIFY ----- THROTTLE OF AFFECTED ENGINE

**BELOW ~1000 AGL? ----- FEATHER DEAD ENGINE
 IN TRAINING, SET SIM FEATHER (10")
 DECLARE EMERGENCY, LAND LONG RUNWAY**

ABOVE ~1000 AGL? --- ATTEMPT TO FIX DEAD ENGINE
 FUEL SELECTORS ----- FULLEST TANKS
 CROSSFEED ----- ON
 PRIMERS ----- IN and LOCKED
 CARB HEAT ----- AS NEEDED
 MAGNETOS ----- ON
 RESTART ----- ATTEMPT IF PROP NOT TURNING
IF RESTART FAILS, THEN SECURE (FEATHER)

ENGINE SECURE (FEATHER)

IDENTIFY ----- DEAD FOOT, DEAD ENGINE
 VERIFY ----- THROTTLE OF AFFECTED ENGINE
 PROPELLER (**AFFECTED** ENGINE) ----- FEATHER
 MIXTURE (**AFFECTED** ENGINE) ----- CUTOFF
 FUEL PUMP (**AFFECTED** ENGINE) ----- OFF
 MAGNETOS (**AFFECTED** ENGINE) ----- OFF(1 BY 1)
 FUEL SELECTOR (**AFFECTED** ENGINE) ----- OFF
 CROSSFEED ----- OFF

ENGINE RESTART

MAGNETOS ----- ON
 FUEL SELECTORS ----- FULLEST TANK
 CROSSFEED ----- OFF
 MIXTURE ----- FULL RICH
 PROPELLER ----- FULL FORWARD
 AIRSPEED (WHILE PRIMING) ----- >120
 PRIME ----- AS REQUIRED
 STARTER (AFFECTED ENGINE) ----- ENGAGE
 POWER ----- IDLE UNTIL UNFEATH THEN 11" FOR
 3 MIN TO WARM

PIPER APACHE N164YF MANEUVERS

STEEP TURNS

CLEARING TURNS----- DONE
PUMPS, LIGHTS, FUEL ----- CONFIGURED
THROTTLE-----14"-15" MP
PROPS----- 2400 RPM
AIRSPEED ----- 110 MPH
THROTTLE----- 20-21" DURING TURN

CRUISE CONFIG

POWER OFF STALL

CLEAR, PUMPS, LIGHTS, FUEL----- DONE/SET
THROTTLE----- 10-12" MP
MIXTURES----- SET FOR ALTITUDE
PROPS----- MINIMUM 2400
AIRSPEED ----- <125 MPH
GEAR ----- DOWN
AIRSPEED ----- <100 MPH
FLAPS ----- DOWN
STABILIZED DESCENT ----- 80-90 MPH
THROTTLE----- IDLE
PITCH TO STALL (OR FIRST INDICATION)

RECOVERY ----- **REDUCE AOA**
THROTTLE----- FULL POWER
PITCH ----- CLIMB(**Target Vy**)

FLAPS UP, POSITIVE ROC, GEAR UP

CRUISE CONFIG

POWER ON STALL

CLEAR, PUMPS, LIGHTS, FUEL----- DONE/SET
MIXTURES ----- SET FOR ALTITUDE
PROPS----- MINIMUM 2400
AIRSPEED ----- 80-90 MPH
THROTTLE----- 21" MP (SIMULATE FULL POWER)
PITCH TO STALL (OR FIRST INDICATION)

RECOVERY ----- **REDUCE AOA**
THROTTLE----- NO CHANGE (ALREADY SIM FULL)
PITCH ----- CLIMB(**Target Vy**)

CRUISE CONFIG

ACCEL STALL

CLEAR, PUMPS, LIGHTS, FUEL----- DONE/SET
THROTTLE----- 13" MP
MIXTURES----- SET FOR ALTITUDE
PROPS----- MINIMUM 2400
AIRSPEED ----- 100 MPH
STALL >1G, RECOVER (UNLOAD, UNROLL, POWER), Vy
CLIMB

CRUISE CONFIG

SLOW FLIGHT

CLEAR, PUMPS, LIGHTS, FUEL----- DONE/SET
THROTTLE----- AS NEEDED
PROPS----- 2400 RPM
GEAR, THEN FLAPS----- AS SPECIFIED
THROTTLE----- AS NEEDED (Approx 15")
AIRSPEED ----- FIND STALL INDICATION FOR SPEED

CRUISE CONFIG

PIPER APACHE N164YF MANEUVERS

VMC DEMO, >4,000 AGL

CLEAR, PUMPS, LIGHTS, FUEL----- DONE/SET
FLAPS, GEAR ----- UP

THROTTLES----- 13" MP
MIXTURES ----- SET FOR ALTITUDE
PROPS ----- FORWARD
AIRSPEED ----- 100 MPH
LEFT THROTTLE ----- SLOWLY CLOSE
HEADING ----- MAINTAIN

AIRSPEED ----- **Vyse**
RIGHT THROTTLE----- INCREASE TO FULL POWER
AIRSPEED ----- DECREASE AT 1MPH/SECOND
RECOVER AT FIRST SIGN OF LOSS OF DIREC CONTROL,
-----STALL INDICATION (WARNING OR BUFFET)

RECOVERY - SIMULTANEOUS ----- **REDUCE AOA**
----- **REDUCE POWER (approx. 2/3 throttle)**

RECOVERY ----- SPEED INCR., RT THROTTLE FULL
AIRSPEED ----- **Vyse**

CRUISE CONFIG

DRAG DEMO, SIM FEATHER, >4,000 AGL

CLEARING TURNS ----- EXECUTE
MIXTURES, PROPS ----- FULL FORWARD
FUEL PUMPS ----- ON
THROTTLES ----- LEFT IDLE, RIGHT FULL
AIRSPEED ----- **Vyse**

VSI = ----- A) _____

EXTEND GEAR, **Vyse**. VSI = ----- B) _____

EXTEND FLAPS, **Vyse**. VSI = ----- C) _____

LEFT THROTTLE ----- 10" MP(SIM FEATHER)

VSI = ----- D) _____

FLAPS UP, **Vyse**. VSI = ----- E) _____

GEAR UP, **Vyse**. VSI = ----- F) _____

THROTTLES ----- BOTH 16" MP

CRUISE CONFIG

DRAG DEMO, ENGINE FEATHERED, >4,000 AGL

CLEARING TURNS ----- EXECUTE
FUEL PUMPS ----- ON
LEFT MIXTURE----- CUTOFF
POWER UP, CLEAN UP, ID, VERIFY

AIRSPEED ----- **Vyse**

VSI = ----- U) _____

EXTEND GEAR, **Vyse**. VSI = ----- V) _____

EXTEND FLAPS, **Vyse**. VSI = ----- W) _____

L. ENG, **FEATHER**, then **Vyse**. VSI = ----- X) _____

FLAPS UP, **HAND PUMP**, **Vyse**. VSI = ----- Y) _____

GEAR UP, **HAND PUMP**, **Vyse**. VSI = ----- Z) _____

LEFT ENGINE ----- RESTART PROCEDURE

CRUISE CONFIG

Windmill
Sim Feath
Windmill

Feathered
Windmill

PREFLIGHT

Cabin

W&B (Dispatch book) -----Calculate/Check
AROW/AVIATE -----Checked
Master Switch -----On
Fuel Quantity -----Check
Light switches -----On
Pitot Heat -----On
Landing Gear Down Lights ----- Check 3 Green
Gear Up, Stall, Gear Unsafe Lights -----Check
Lights (outside) -----Verify
Pitot Tube (outside) -----Check for Warmth
Stall Horn (outside) -----Check
Switches ----- Off
Flaps ----- Deploy (Handle in UP position when done)

Cross Feed Fuel System (place bucket under drain)

Cross Feed **Valve** -----On
Right Elec FP -----On
Cross Feed **Drain** ----- Open (3s), then Close
Right Elec FP ----- Off
----- Right side of Cross Feed is now purged
Left Elec FP -----On
Cross Feed **Drain** -----Open(3s), then close
Left Elec FP ----- Off
Cross Feed Drain and Valve -Confirm both Off/Closed
Master ----- Off

Fuel

Aux Tanks ----- Check level (wet)
Main Tanks -----Check
----- Right Main Needs 20+ Gallons (for Rt SE work)
Sump (under wing, inside engine) ----- Drain
----- ****18-20s drain required if switching Main/Aux****

Oil

Engine Oil Level (check both engines) ----- 7-8 qts

Right Wing

Flap -----Check
Aileron -----Check
Wing Surface and Leading Edge -----Check
Wingtip -----Check
Engine/Cowling/Prop -----Check
Landing Gear -----Check

Nose

Baggage Compartment -----Check screws
Battery Compartment -----Check screws
Surface -----Check

Left Wing

Flap -----Check
Aileron -----Check
Wing Surface and Leading Edge -----Check
Wingtip -----Check
Engine/Cowling/Prop -----Check
Landing Gear -----Check

Pitot/Static tube ----- Check

Empennage

HS, VS Surfaces ----- Check
Rudder ----- Check
Rudder Attach bolts ----- Check
Elevator ----- Check
Elevator Attach Bolts ----- Check

Fuselage

Antennae ----- Check
Baggage Door ----- Check

Optional(Aux Tank Drain)

Assuming Fuel Selector is on Main:

Fuel Selector ----- Aux
Sump (under wing, inside engine) -- Drain 18s or more
Fuel Selector ----- Main
----- Use Aux Tank only in S&L flight

Briefing Example

Takeoff: This is a short-field takeoff. Use all available runway. Departing runway 20, it is 2400 feet long. Taxi out, line up with the centerline, apply brakes and 2,000 RPM. Listen for any abnormalities, check engine pressures and temperatures. If everything is acceptable, we will release the brakes, stay on centerline, and apply full power. Rotation speed is 77MPH.

If we have any abnormalities prior to rotate, we will chop the throttles and apply brakes. If we have reached 77MPH we will rotate and climb out.

Any abnormalities once flying, we will Fly The Plane (Ball/Bank, Rud/Ail/Pitch), pitch for **V_{yse}**, Power Up, Clean Up, Identify, Verify and if below 1,000 AGL, feather the bad engine if producing no thrust. We will then declare an emergency and land on a long runway (Ex: Hillsboro). Above 1,000 we may attempt a restart/secure then declare/land long runway.

V_R is 77

V_{MC} is **72**

V_{yse} is 95

V_{EnrouteClimb} is 110-120

PIPER APACHE N164YF TRAFFIC PATTERN

