Piper PA-31 Navajo

Pre-inspection

- Documents - on board
- Walk around both engines - complete
- Landing gear - extended, doors checked
- Chocks and tie-downs - removed
- Pitot, static, alternate static - clear
- Control surfaces - free and correct
- Fuel quantity each tank - verified
- Fuel sumps both sides - drained
- Oil quantity both engines - checked
- Cowl flaps both engines - free
- Tires and brakes - checked

Before engine start

- Seats and seat belts - fastened
- Fuel selectors L and R - ON, mains
- Mixtures L and R - rich
- Propellers L and R - full forward
- Throttles - cracked 1/4 inch each
- Cowl flaps - open
- Landing gear - down and locked
- Brakes - hold
- Master switch - on
- Beacon - on
- Area - clear both sides, shout 'clear prop'

Engine start

- Auxiliary fuel pump L - on, prime if needed
- Magnetos L - both / start
- Left engine - start
- Left engine oil pressure - rises within 30 seconds
- Left throttle - 1000 RPM
- Auxiliary fuel pump R - on, prime if needed
- Magnetos R - both / start
- Right engine - start
- Right engine oil pressure - rises within 30 seconds
- Right throttle - 1000 RPM
- Alternators - L and R on, check ammeters

After engine start

- Avionics master - on
- PFD / MFD - initialize
- Radios - set
- ATIS / weather - obtain
- Altimeter - set to QNH
- Transponder - set code
- Flight plan - load and activate
- Cross-feed - checked then off

Before taxi

- Flaps - up
- Doors - closed and latched
- Flight controls - free and correct
- Brakes - check both
- Gear lever - down

Before takeoff

- Throttles - 1800 RPM each for run-up
- Magnetos L and R both engines - check, max 175 RPM drop
- Propellers both engines - cycle
- Manifold pressure - verify symmetric
- Engine instruments - all green both sides
- Gear handle - verify down
- Trim - takeoff position
- Flaps - takeoff position
- Auxiliary fuel pumps - on both
- Lights - landing, strobe, beacon on
- Cowl flaps - open
- Single-engine briefing - Vmc, Vyse, abort criteria reviewed

Takeoff

- Throttles - smoothly to full both
- RPMs - maximum both
- Engine instruments - green both
- Airspeed - alive
- Rotation - at Vr
- Positive rate - verify

Climb

- Landing gear - UP at positive rate, no usable runway
- Gear lights - all out
- Power - climb power both
- Propellers - climb RPM
- Airspeed - Vy or Vyse minimum
- Flaps - up
- Auxiliary fuel pumps - off above 1000 ft AGL
- Mixtures - lean for climb
- Cowl flaps - manage CHT

Cruise

- Power - cruise both engines, synchronized
- Propellers - cruise RPM, synchronized
- Mixtures - leaned
- Engine sync - check or auto
- Cowl flaps - as required
- Fuel management - switch tanks per schedule, cross-feed if needed

Descent

- Power - reduced gradually both
- Mixtures - enrich
- ATIS at destination - obtain
- Approach briefing - complete

Before landing

- Fuel selectors - mains
- Mixtures - rich both
- Propellers - full forward both
- Auxiliary fuel pumps - on both
- Landing gear - DOWN below Vle
- Gear lights - three green confirmed
- Flaps - set per phase
- Landing lights - on
- Speeds - per POH, above Vyse on final

Landing

- Final approach - per POH
- Gear - verify down on short final
- Round out and flare - smooth
- Touchdown - main wheels first
- Braking - as needed, asymmetric awareness

After landing

- Flaps - up
- Auxiliary fuel pumps - off
- Cowl flaps - open
- Strobe - off
- Transponder - standby
- Taxi - to parking

Shutdown

- Parking brake - set
- Avionics master - off
- Throttles - idle
- Mixtures - idle cutoff both
- Magnetos L and R - off both engines
- Master switch - off
- Beacon - off
- Cowl flaps - open for cooling