

Cessna 182 N253WP Operating Guide and Tips

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Speeds

Vx sea level	63
Vy sea level	80
Cruise climb	85 - 95
Vno	140
Vne	175
Vfe 10	140
Vfe 20	120
Vfe Full	100
Best glide	75
Vref full flaps	60 - 70
Vref no flaps	70 - 80
Short field full flaps	60

Limitations

Total Fuel	92 gallons
Usable Fuel	88 gallons
Fuel at tabs	65 gallons

Oil Quantity Min 6 Quarts for local flight, 6.5 when heading out on a cross-country flight

Tire Pressure Nose	49
Main	42

Baggage Area A	120 lbs (forward of baggage door latch.
Baggage Area B	80 lbs. (aft of baggage door latch)
Baggage Area C	80 lbs. (upper shelf)

NOTE: Max combined weight of all 3 areas is 200 lbs.

Weight and Balance

Basic Empty Weight	1987.2
CG	37.20
Moment	73939.36

Max Ramp Weight	3110 lbs
Max Takeoff Weight	3000 lbs
Max Landing Weight	2950 lbs

Flight Profiles

Taxi

Lean aggressively, power set to a min of 1200 RPM when stopped

Run-up

When performing the prop check, max of 100 RPM drop is all that's needed

Takeoff and Climb

0 to 20 flaps are approved, and I've found 10 flaps to be the sweet spot for normal operations.

Advance power slowly to 1800 RPM with brakes applied, check engine instruments, release brakes and slowly advance power to full.

Rotate 55 to 60, climb at V_x or V_y as needed. At 1,000' AGL, accelerate to cruise climb speed of 90 knots. Reduce the power to 25 in. Hg or FULL THROTTLE (whichever is less) and 2400 RPM. Adjust rudder trim to alleviate rudder control pressure (much more than a 172).

NOTE: Max continuous power is ok if needed for extra climb performance for terrain or conditions; RPM in this airplane currently maxes out around 2200 - 2300 during climb with the prop full forward.

Max CHT is 500, but practically you should never let it get above 400. Keep the cowl flaps open until leveling off at cruise altitude, and adjust pitch angle/climb speed and mixture to keep CHT temps below 400.

Cruise

When leveling off, consider the "1, 2, 3...1, 2, 3" technique. The first 1, 2, 3 is left to right across the power quadrant: throttle, prop, mixture. The second 1, 2, 3 is: flaps, cowl flaps, trim (elevator and rudder).

The POH guidance suggests operating at peak EGT, but 75 degrees rich of peak is considered the better practice from those who have operated the IO-540 for decades. Also reducing the RPM to 2300 during cruise (instead of 2400 red line) will provide less strain on the engine and reduce the noise level.

Descent

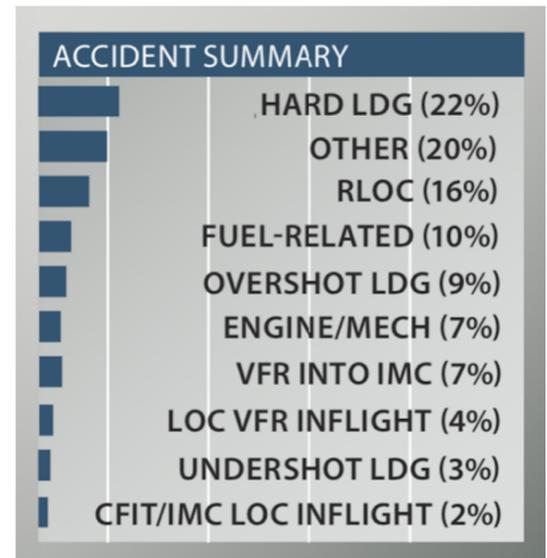
When operating larger 6 cylinder engines, it's important to avoid making large power reductions during descents to avoid shock cooling the engine. A good rule of thumb is to decrease the power by 1" per minute (2" per minute max if needed).

Approach and Landing

First, here's some guidance from the Aviation Consumer based on a review of 100 recent C182 Accidents. Hard landings are at the top:

Because of some careful engineering, the 182 series airplanes have a long center of gravity range, allowing the pilot much flexibility in loading without going out of the aft limit, as can be a problem with some competitors. The upshot is that when flying alone, or with just one passenger in the other front seat, the airplane is often near the forward CG limit.

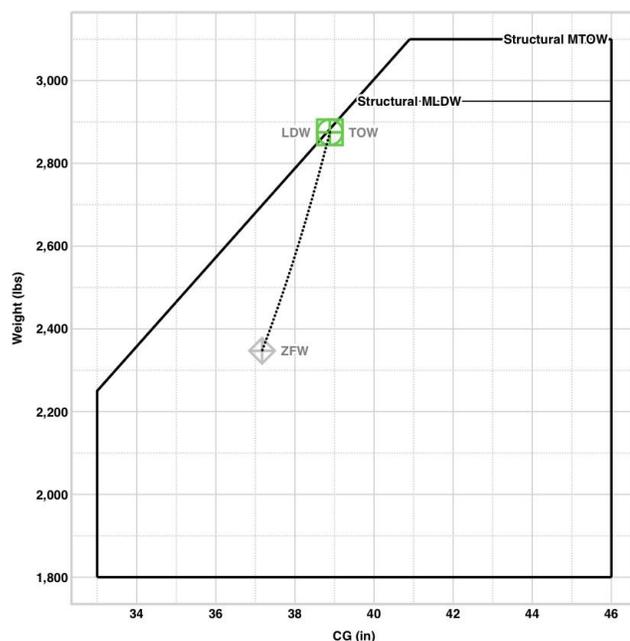
That has given the airplane an unjustified reputation for being "nose heavy." When any airplane is loaded near the forward CG limit it takes a focused effort on the part of the pilot to raise the nose and actually stop the descent in the flare and then land on only the main gear. The forward CG limit is usually where a pilot cannot flare the airplane to land—being near it requires really pulling on the yoke to get into touchdown attitude.



Here's what the W&B looks like with two people in the front seats, showing the CG right at the forward limits:

Load Manifest for N253WP (C182)

Created Nov 13 2022 18:23Z



Item Description	Weight (lbs)
Souls on board	2
Front Seats / Pilot	180
Front Seats / Passenger	180
Rear Seats / Left Seat	0
Rear Seats / Right Seat	0
Cargo	
Cabin Compartment	0
Tail Compartment	0
Tail Compartment	0

VFR Traffic Pattern

Entering the Pattern -	2300/18" - 100 knots,
Abeam the numbers -	2000 RPM, 10 degrees of flaps, pitch for 85 knots
Base -	80 knots, 20 degrees of flaps
Final -	65 knots, full flaps (no need to go full rich mixture, unless performing a go-around)

Compared to a C172, it's even more important to always make a trim change whenever adjusting power or increasing flaps in the traffic pattern. Trimming out control pressures will make it much easier to control the nose-down tendency during the roundout and landing with a forward CG.

ILS or LPV Instrument Approach

Vectors - 16 - 18" - 100 knots

Established on final approach segment and prior to glideslope intercept - 10 degrees flaps

Glideslope intercept - reduce power to 13 - 15" - 90 knots

Avionics Tips

GTX345/GNS 175 - Bluetooth Pairing

The Garmin transponder includes ADS-IN capability and will send GPS, AHRS, and ADS-B traffic/weather to your iPad and ForeFlight via Bluetooth through the Garmin GPS 175. To pair your iPad, press the Home button on the GPS 175, select System and then Connex.

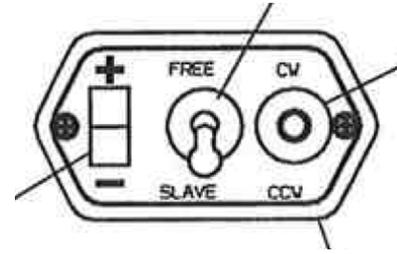
The unit will automatically reconnect to the last 13 paired devices, so you may need to remove a device first before pairing.

KAP140 Autopilot Instrument Procedures

The KAP140 autopilot will hold the GPS course for en route navigation and follow localizer/glideslope and lateral/vertical navigation for ILS, LPV and LP+V approaches. The (APR) Approach mode should be used for all 3 types with vertical guidance.

Mechanical HSI

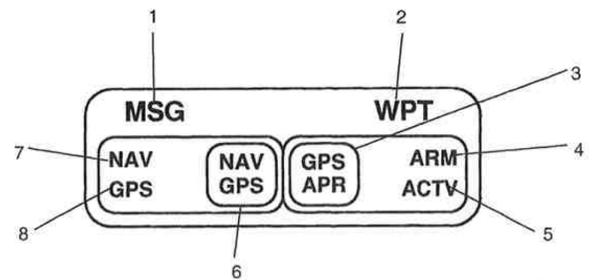
The HSI uses a slaved compass system to automatically determine and display the magnetic heading on the compass ring. When everything is working normally, there's nothing to do except verify that the compensator switch at the lower left of the panel is in the Slave position and that the indicated heading agrees with the compass before takeoff.



If you move the switch to the Free position, you can then adjust the heading with the CW/CCW switch. From a practical standpoint, if the heading is significantly off, that means something else mechanically is wrong and adjusting it from the Free position will only be a temporary solution.

NAV Source Selector

The Nav Source selector switch is located just above the audio panel and is used to select navigation guidance on the HSI course needle from either the GPS 175 or the Nav 1 Radio on the HSI. The GPS/APR button has been disabled since it's not needed with the WAAS GNS 175.



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Additional Resources

[KAP 140 Autopilot – Pilot's Guide](#)

[182S Pilots Operating Handbook](#)

[GPS 175 Manual](#)

[GTX 345 Transponder Manual](#)

[EDM 800 Manual](#)

[Click here to install the 253WP C182 ForeFlight Aircraft Profile](#)

[Flight Maneuvers Profiles](#)