

Traffic Pattern



What

Every flight begins and ends at an airport or other suitable landing field.

It is essential that pilots learn the traffic rules, traffic procedures, and traffic pattern layouts that may be in use at various airports.

It is imperative that a pilot form the habit of exercising constant vigilance in the vicinity of airports even when the air traffic appears to be light.

What

To assure that air traffic flows into and out of an airport in an orderly manner, an airport traffic pattern is established.

If the pilot is familiar with the basic rectangular pattern, it is easy to make proper approaches and departures from most airports, regardless of whether or not they have control towers.

Which Way do We Takeoff and Land - Controlled

For the rest of this lesson 'runway' will be not only the large section of pavement/grass/dirt used but also the direction you are using.

For each large section of pavement/grass/dirt, there are actually two runways.

Which Way do We Takeoff and Land - Controlled

On any runway you will see giant runway numbers at both ends.
The number indicate which way you takeoff and land.
Cobb County International Airport (KRYY) has runways 9 and 27.

Runway 9 = takeoff/land to the east

Runway 27 = takeoff/land to the west.

Which Way do We Takeoff and Land - Controlled

At an airport with a tower the controllers will tell you which runway to use.

At an airport without a tower ('uncontrolled'), you have a choice but some days it feels like a negotiation or stand off with other pilots.

Right or Left Traffic?

Standard traffic pattern turns are always to the left, unless the airport specifies it otherwise.

RP = Right Pattern...Right Turns



Which Way do We Takeoff and Land – Uncontrolled

Takeoff and land into the wind unless there is a good reason to use the opposite direction.

At an airport without a tower, it is up to the pilot to decide which (side of the) runway to use.

The Windsack

Most airports have frequencies that you can use to check the weather...but a windsack is always accurate and current

The wind is going into the large hole

The windsack 'points' to the runway to use.

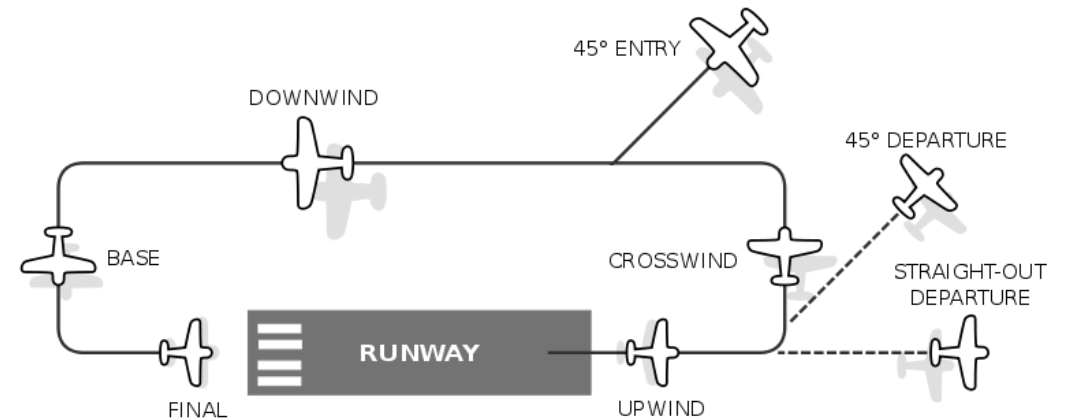


The Standard Pattern

The traffic pattern altitude is usually 1,000 feet above the elevation of the airport surface.

At some airports like the Griffin public airport it is nonstandard...it is 800 AGL

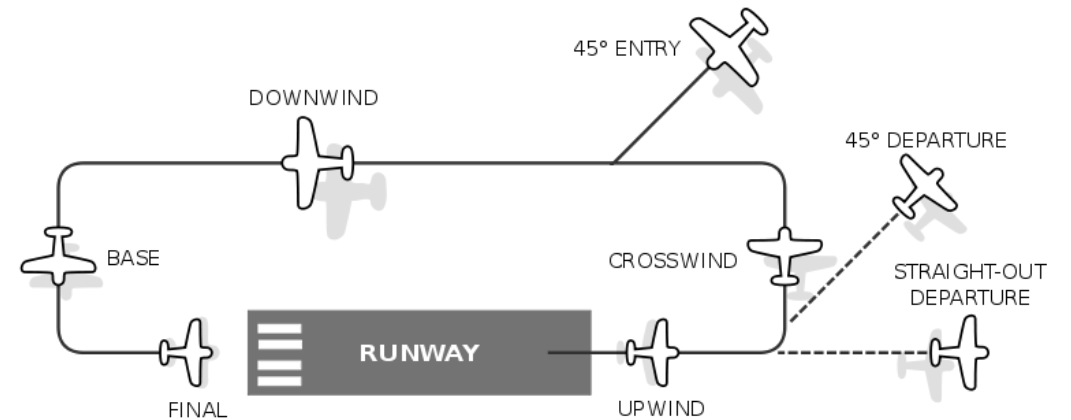
The use of a common altitude at a given airport is the key factor in minimizing the risk of collisions



Standard Entry

The traffic pattern is normally entered at a 45° angle to the downwind leg.

You should arrive at the pattern altitude...not above or below.



Pattern Altitudes

The official source for pattern altitude information in the US from the FAA is the Chart Supplement.

You can also find this information in ForeFlight, Garmin Pilot, the GPS in the planes, and other places.

KHMP: Elevation = 882 ft Pattern = 1882 ft (I round to 1900)

6A2: Elevation = 958 ft Pattern = 1800 ft

Pattern Altitudes

AIM 4-3-3.

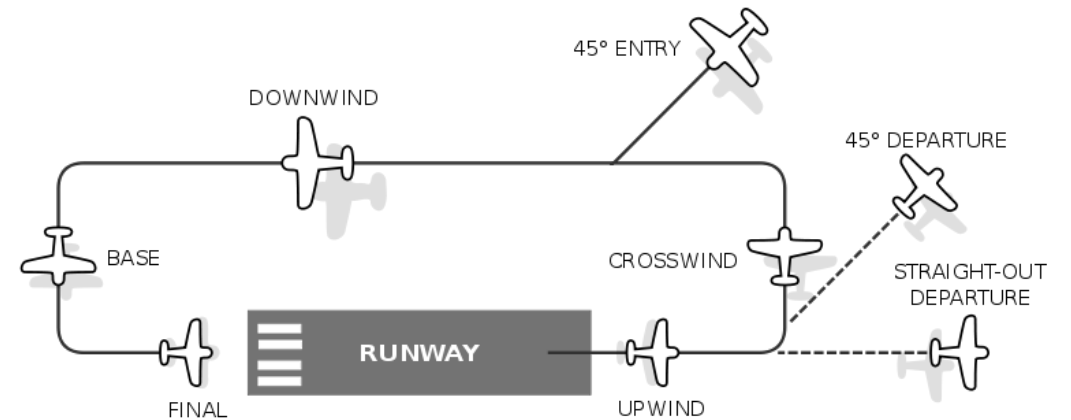
Standard traffic pattern altitude is defined by AIM 4-3-3 as:

1. 1,000 feet above ground level (AGL) for Propeller-driven aircraft.
2. Large and turbine-powered aircraft enter the traffic pattern at an altitude of not less than 1,500 feet AGL or 500 feet above the established pattern altitude.
3. Helicopters operating in the traffic pattern may fly a pattern similar to the fixed-wing aircraft pattern, but at a lower altitude (500 AGL) and closer to the runway. This pattern may be on the opposite side of the runway from fixed-wing traffic when airspeed requires or for practice power-off landings (autorotation) and if local policy permits. Landings not to the runway must avoid the flow of fixed-wing traffic.

Downwind Leg

The downwind leg is a course flown parallel to the landing runway, but in a direction opposite to the intended landing direction.

This leg is flown approximately 1/2 to 1 mile out from the landing runway and at the specified traffic pattern altitude.



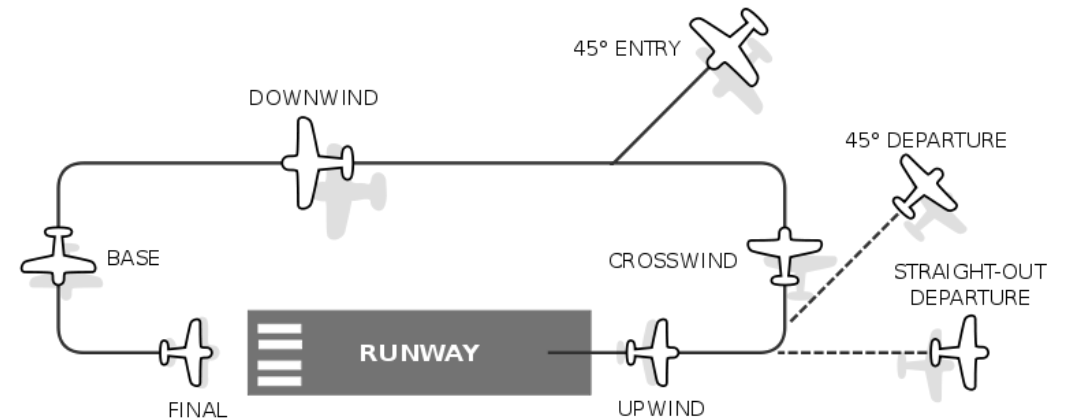
Downwind Leg

When flying on the downwind leg, the pilot should complete all before landing checks and extend the landing gear if the airplane is equipped with retractable landing gear.

GUMPS Check

Mindful of wind

Go Around Ready

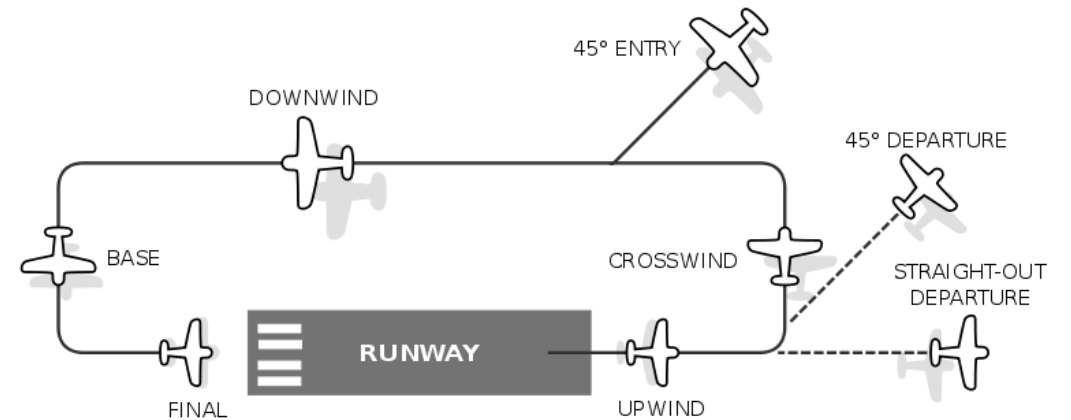


Downwind Leg

Flaps: 0

Pitch: +5 degrees

Airspeed: whatever is reasonable



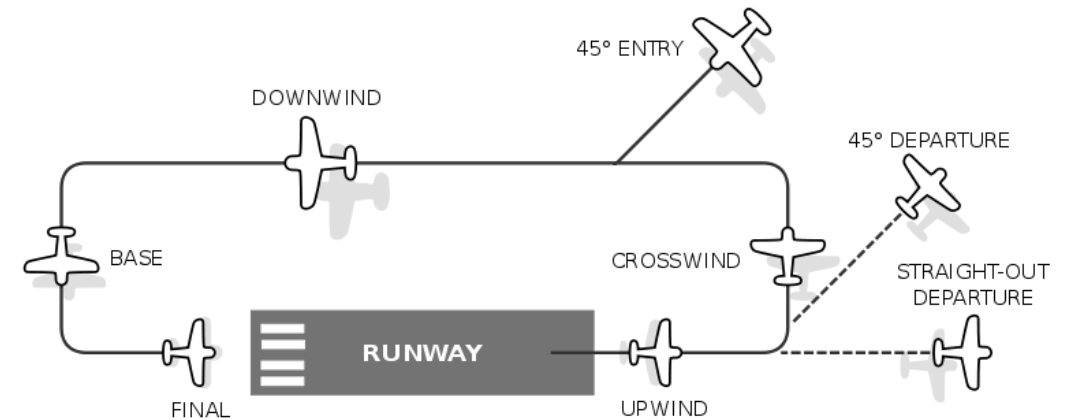
Passing the numbers (end of the runway)

Reduce power and begin a descent.

Flaps: 10 degrees

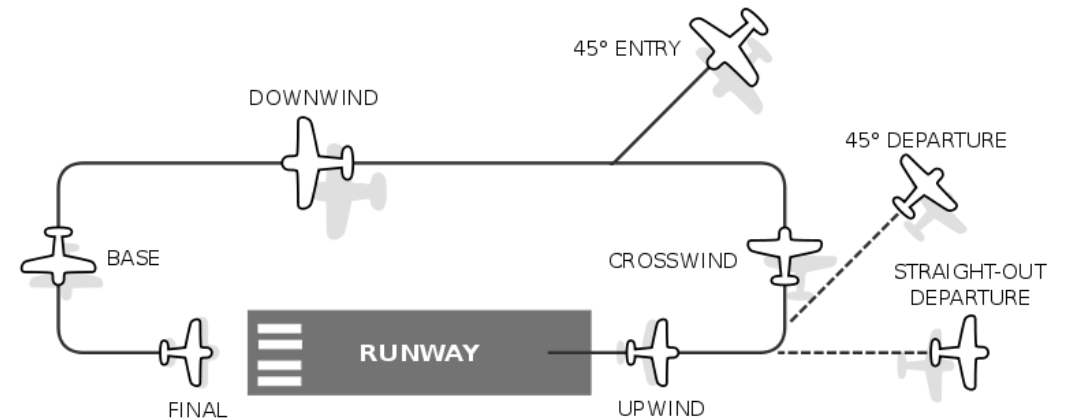
Pitch: -5 degrees

Airspeed: 85



Downwind to Base turn

The pilot should continue the downwind leg to a point approximately 45° from the approach end of the runway, and make a medium bank turn onto the base leg.

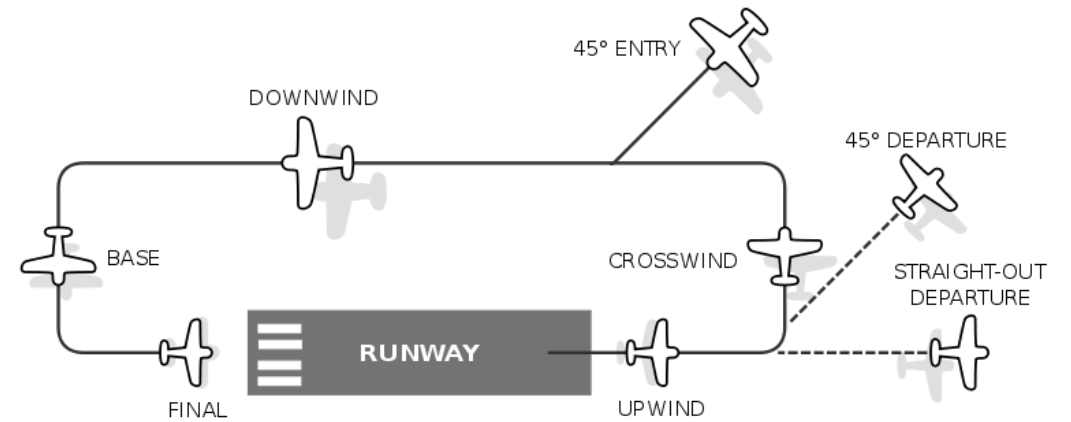


Base Leg

Flaps: 20 degrees

Pitch: -5 degrees

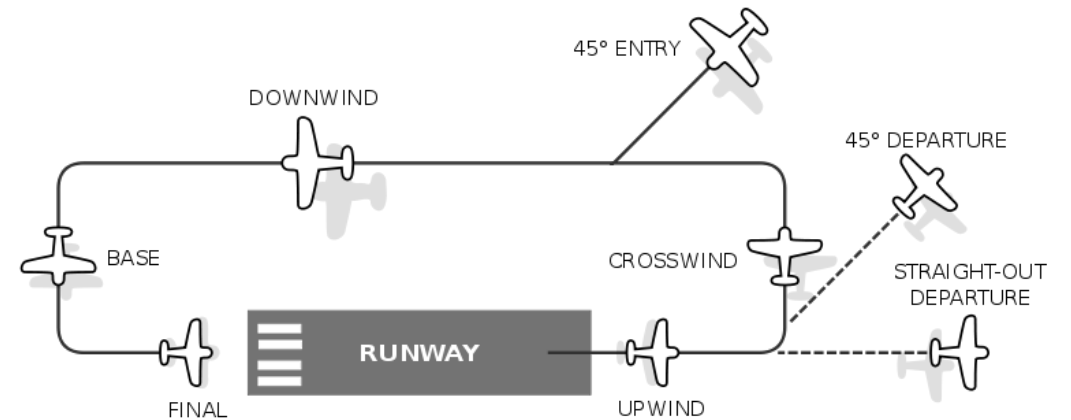
Airspeed: 75



Base Leg

The ground track of the airplane while on the base leg is meant to be perpendicular to the extended centerline of the landing runway.

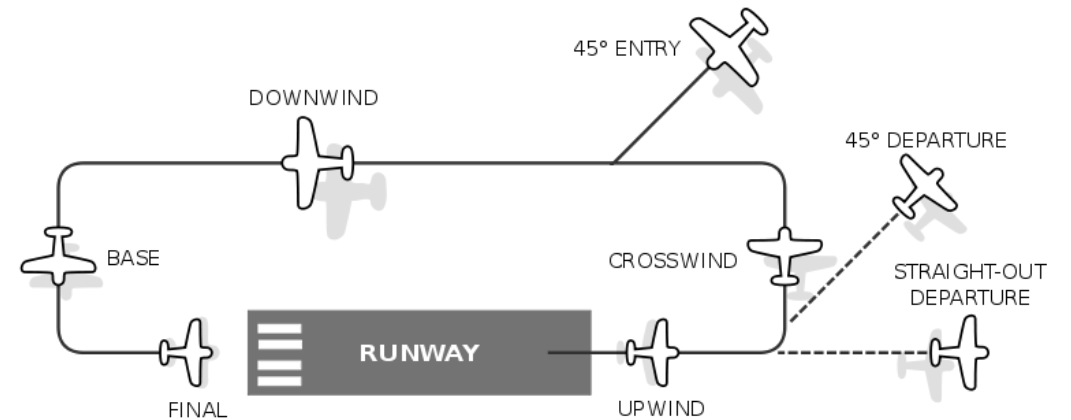
If you are in a high wind situation it is ok to have a crab angle.



Clear Right Clear Left

There could be other aircraft doing very wide patterns and not using the radios.

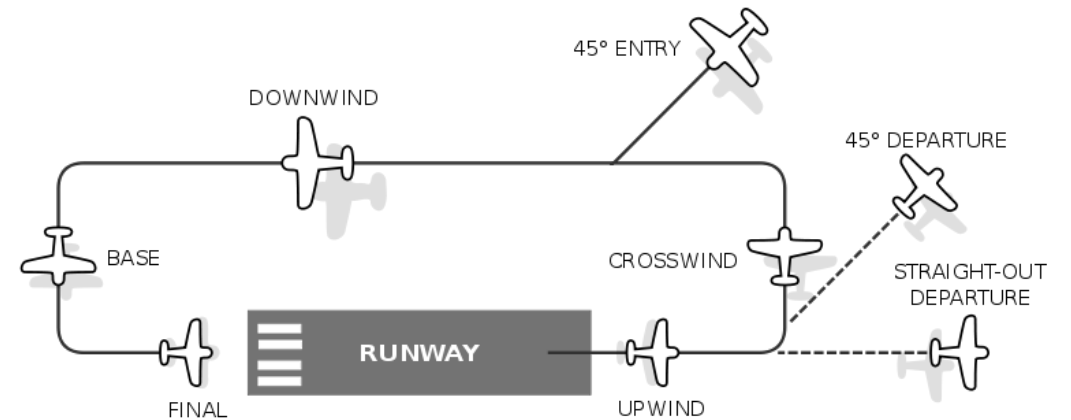
At most non towered airports having a radio installed is not required.



§ 91.113

When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right-of way.

Pilots should not take advantage of this rule to cut in front of another aircraft that is on final approach to land or to overtake that aircraft.



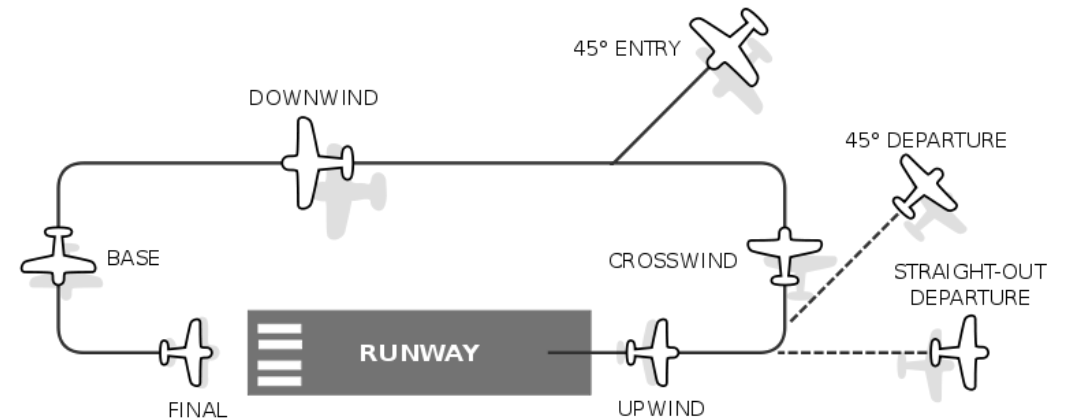
Final

Flaps: 30 degrees

Pitch: -5 degrees

Airspeed: 65, 60 at runway edge

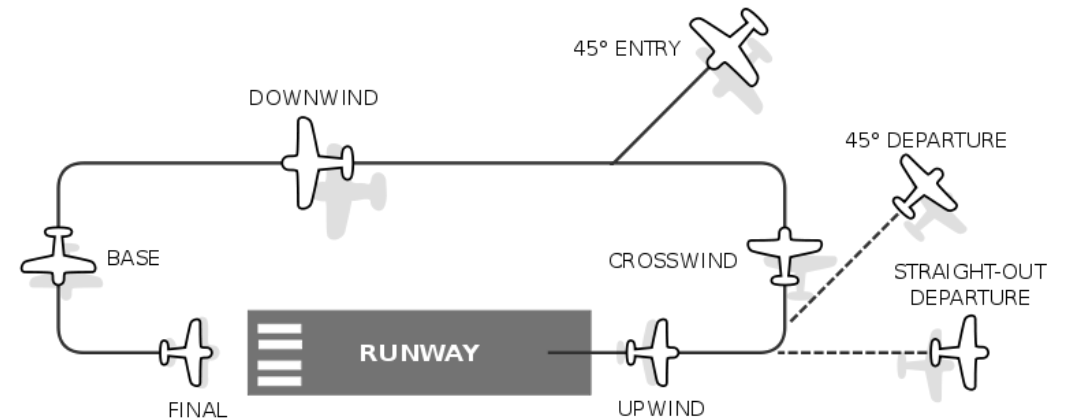
Say out loud on loop: Speed Height Center Nose



Departing

Straight Out or 45° first depends on where you plan to go next.

Caution for aircraft on approach. There may be a plane doing an instrument approach planning on doing a circle to land. This would be a good time to depart at 45° instead of straight out.



Airports with Towers

At airports with operating control towers, the tower operator can instruct pilots to enter the traffic pattern at any point or to make a straight-in approach without flying the usual rectangular pattern.

Many options are possible if the tower operator and the pilot work together in an effort to keep traffic moving smoothly.

Entry Diagram

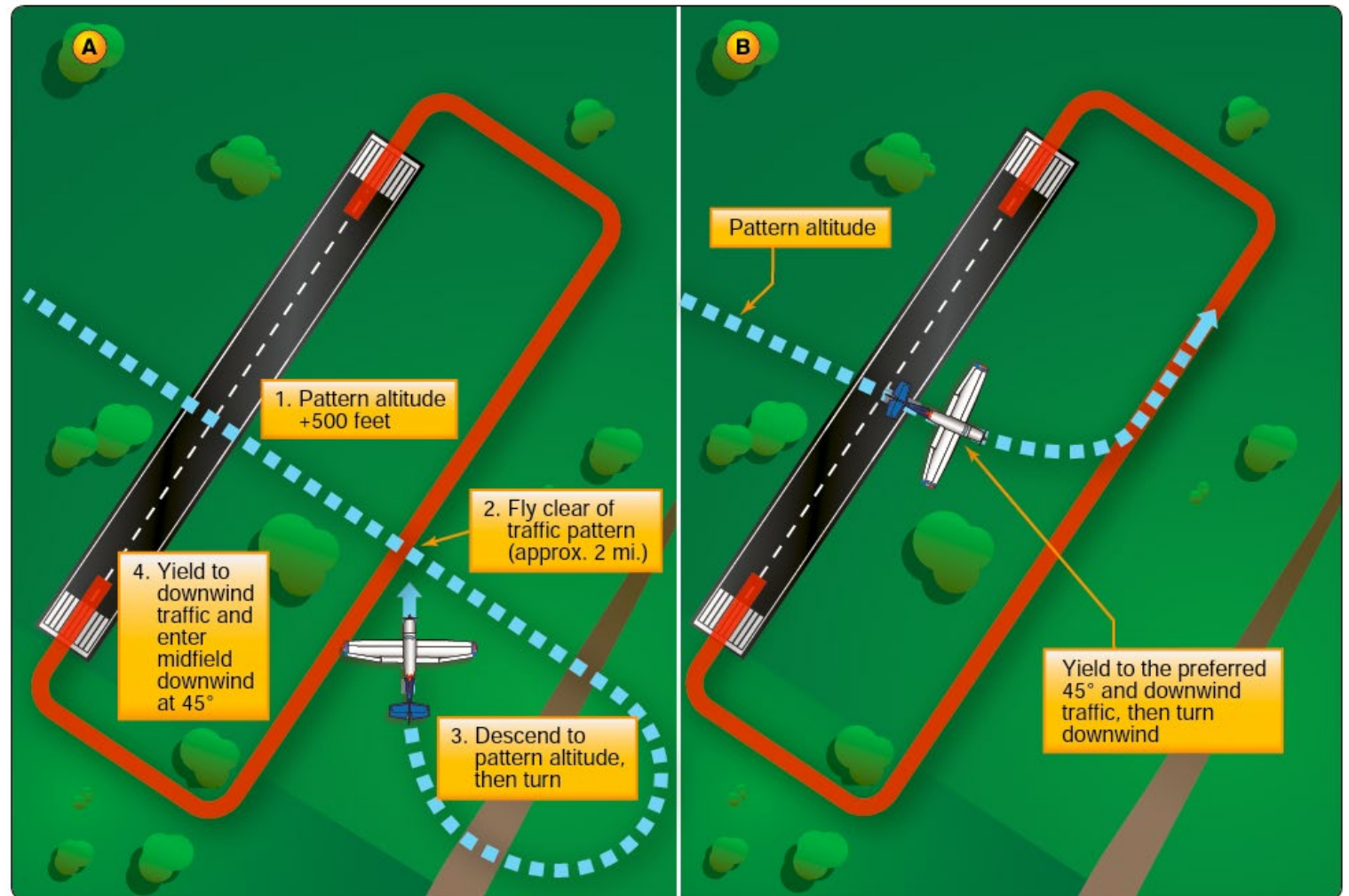


Figure 7-4. Preferred entry from upwind leg side of airport (A). Alternate midfield entry from upwind leg side of airport (B).

Can't I Just Fly Straight In?

Towered Airport

Yes, if you are flying into a towered airport and they allow you to.

Non Towered Airport

Yes, if you are cleared by ATC on an instrument approach in IMC.

Yes, if you are practicing an instrument approach.

If you do, make sure to make radio calls every couple of miles.

If you do not hear anyone, do not assume there is nobody else around, planes are allowed to fly without using the radios at most non towered airports.

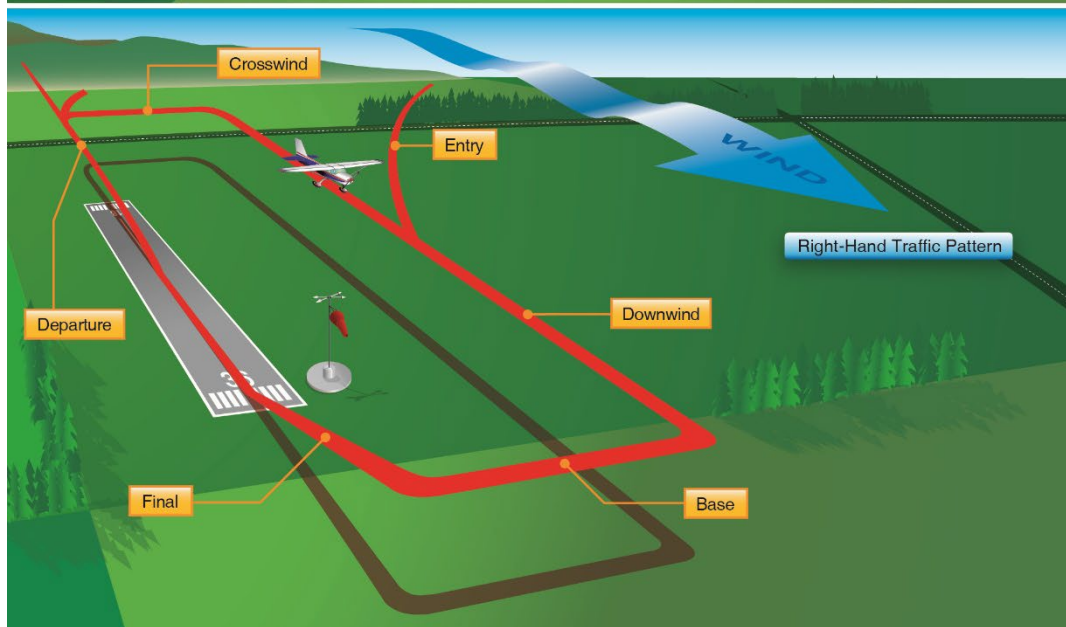
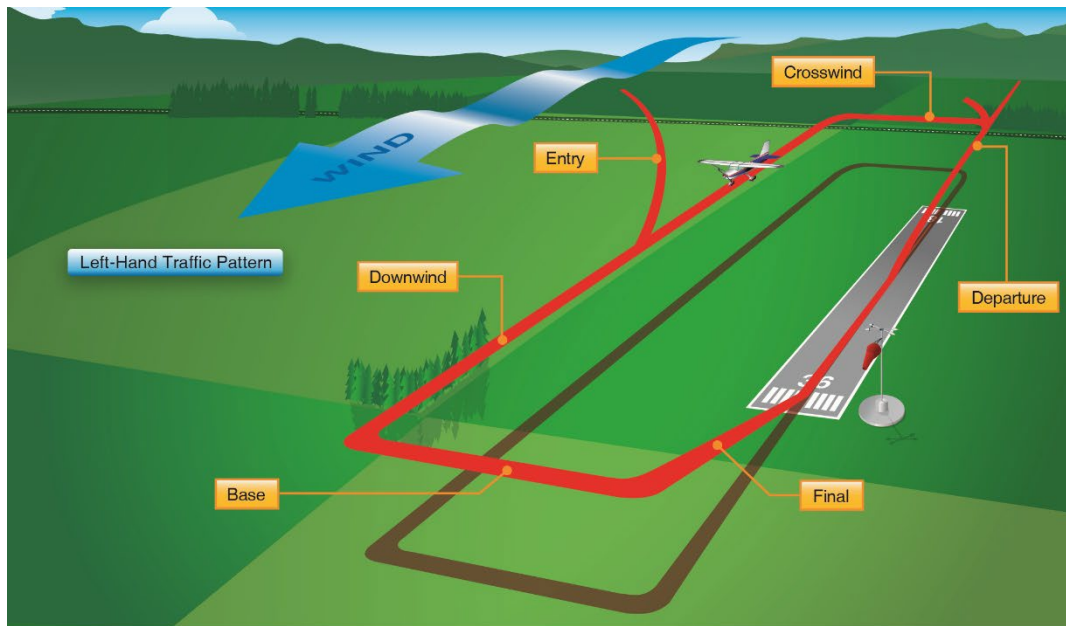
Watch Out for Human Strikes

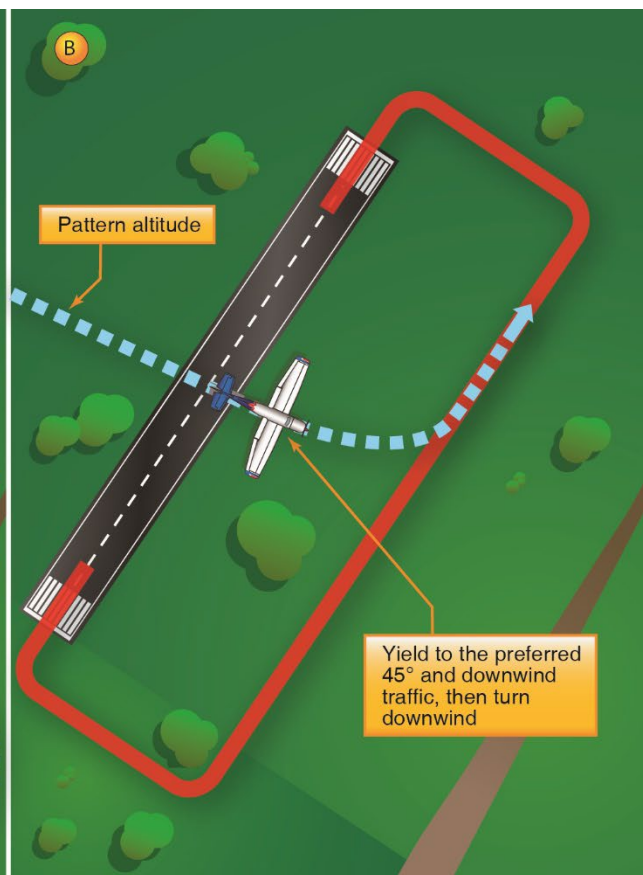
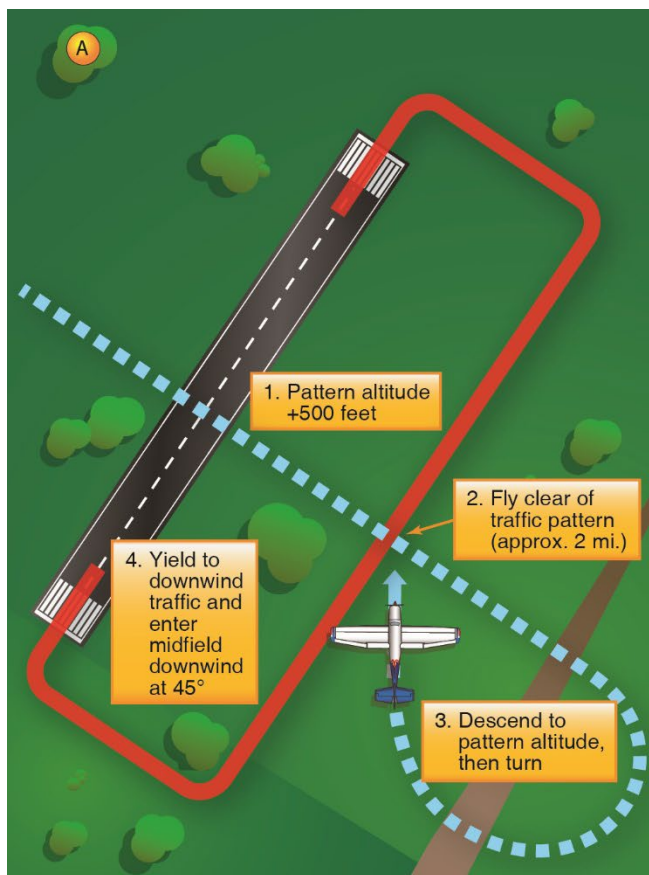
Pay special attention to airports with jumpers.





Any questions I can answer or
follow up later on?





Approach and Landing KHMP Runway 24



14-15 NM from KHMP

Tune to weather frequency for KHMP

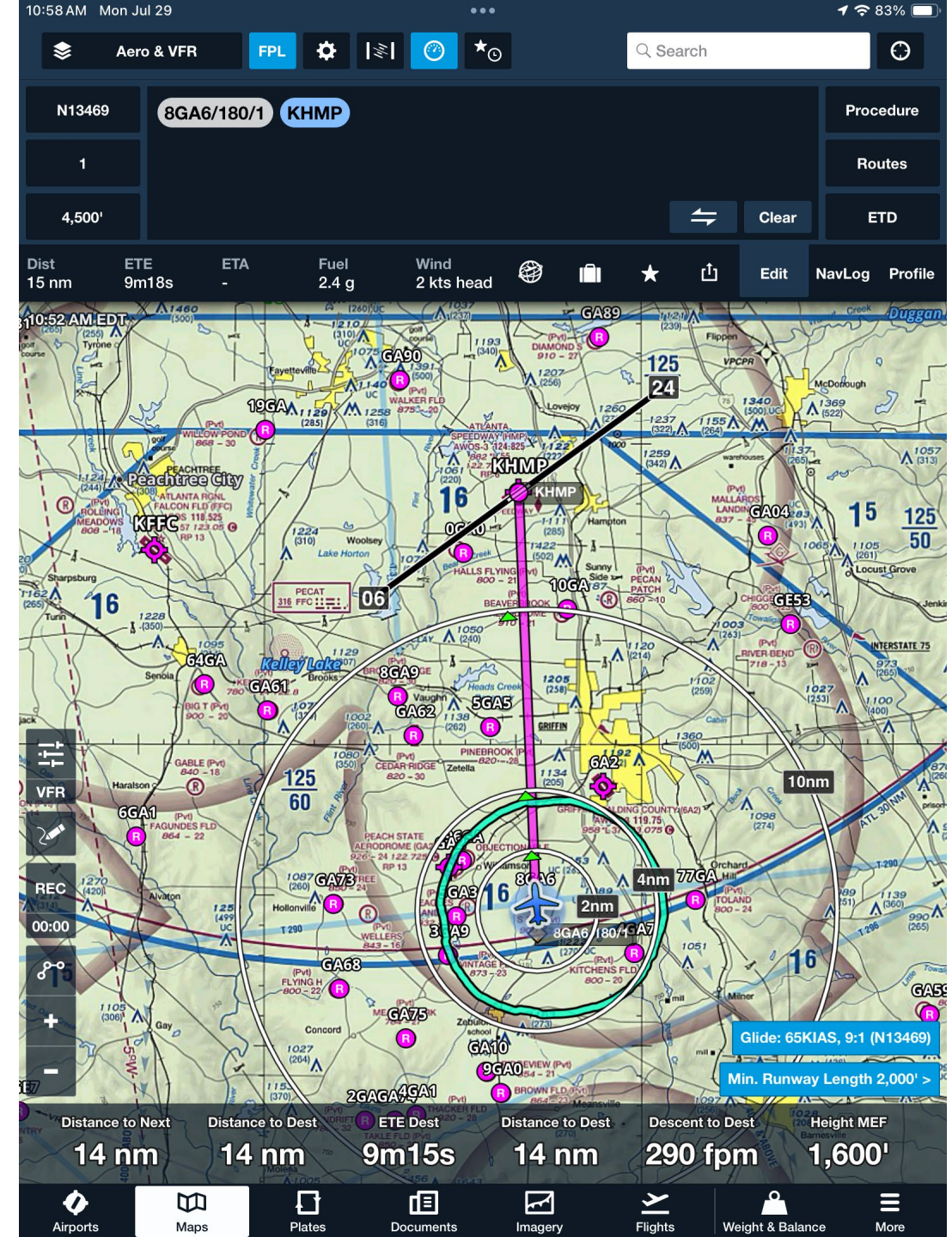
124.82

Winds are reported to be from 270, 7 kts

We will plan to use runway 24

Altimeter setting reported to be 30.17

We will set that in our dashboard



10 NM from KHMP

Tune to the common traffic frequency for KHMP 122.72

“Atlanta Speedway Traffic Skyhawk 13469 10 miles to the south intending for runway 24”

For this scenario, our altitude will be 3500 MSL



8 NM from KHMP

The airspeed will likely be between 90-110 kts
At 90 kts the plane would fly 1.5NM per minute

We are at 3500 MSL, we need to get to 1900 MSL for pattern altitude

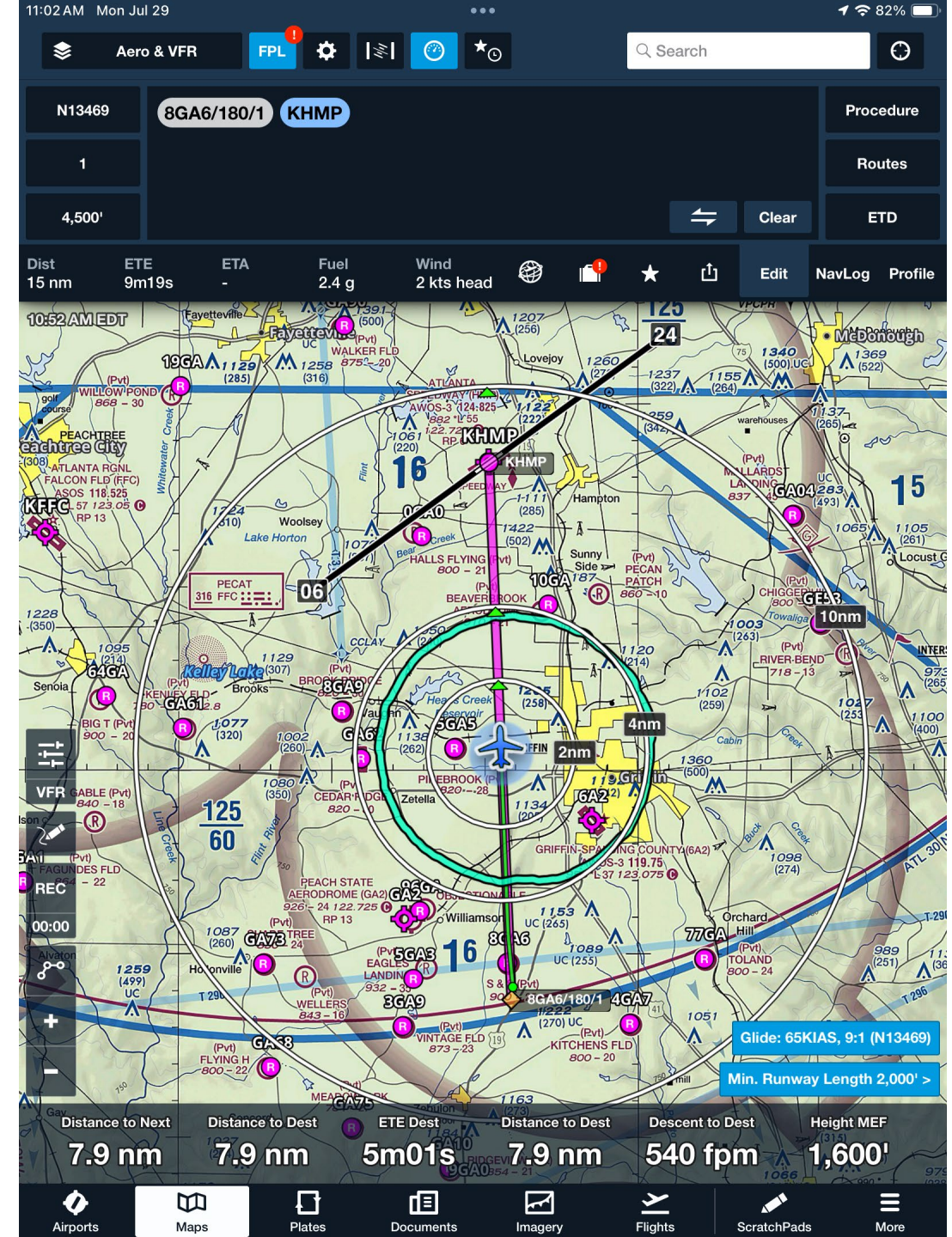
We need to descend 1600 ft

If we descend at 400 fpm... $4 \times 400 = 1600$

It would take 4 minutes to descend

$4 \text{ minutes} \times 1.5 \text{ NM / min} = 6 \text{ NM}$

Therefore at 8 NM away if we start descending 400 fpm that will give us a smooth descent to pattern altitude



Setup flight path

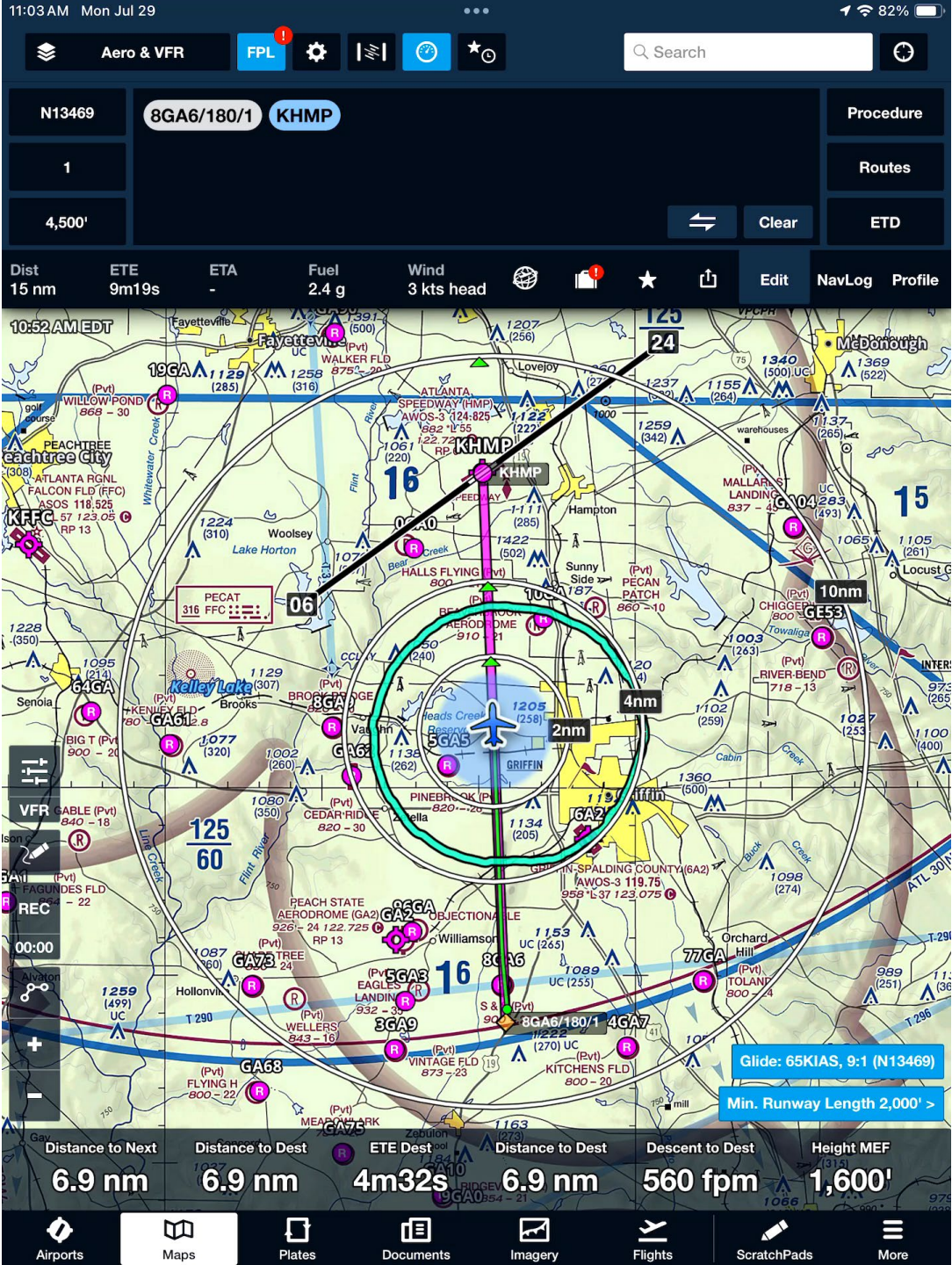
Procedures

Approach

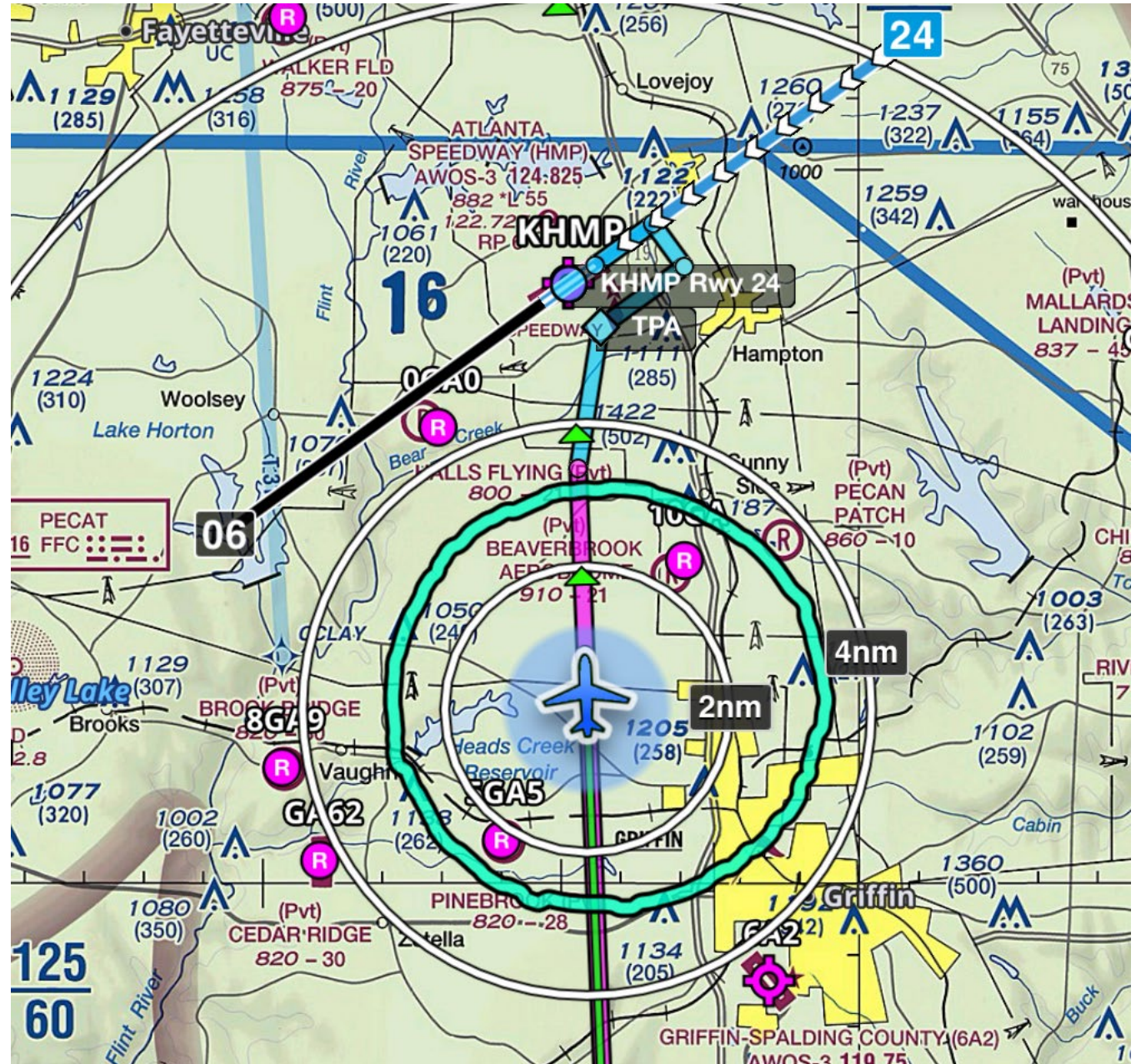
Visual 24

45

Add to Route



Flight path added



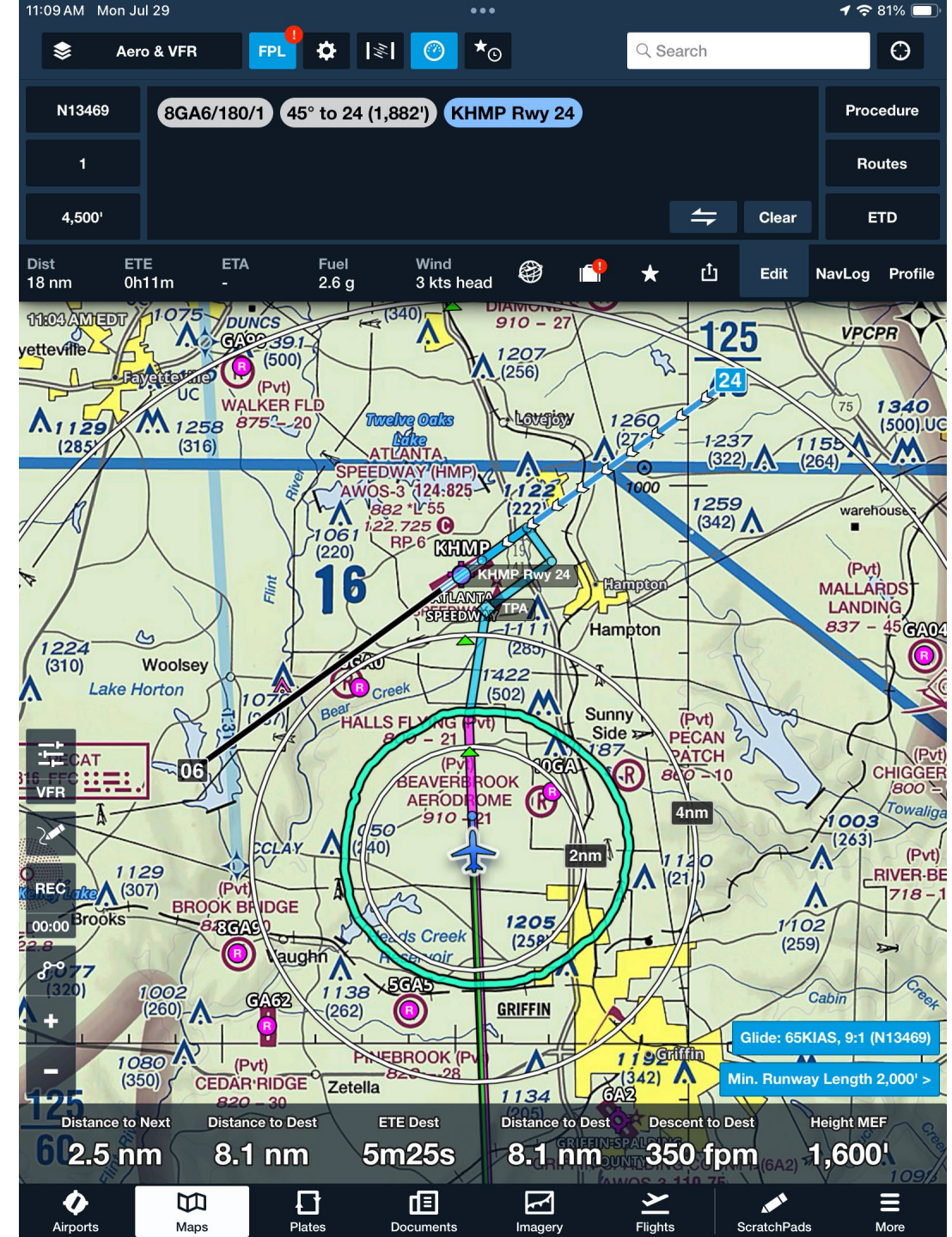
5 NM from KHMP

Distance to Next now shows current location to start of '45' is 2.5NM

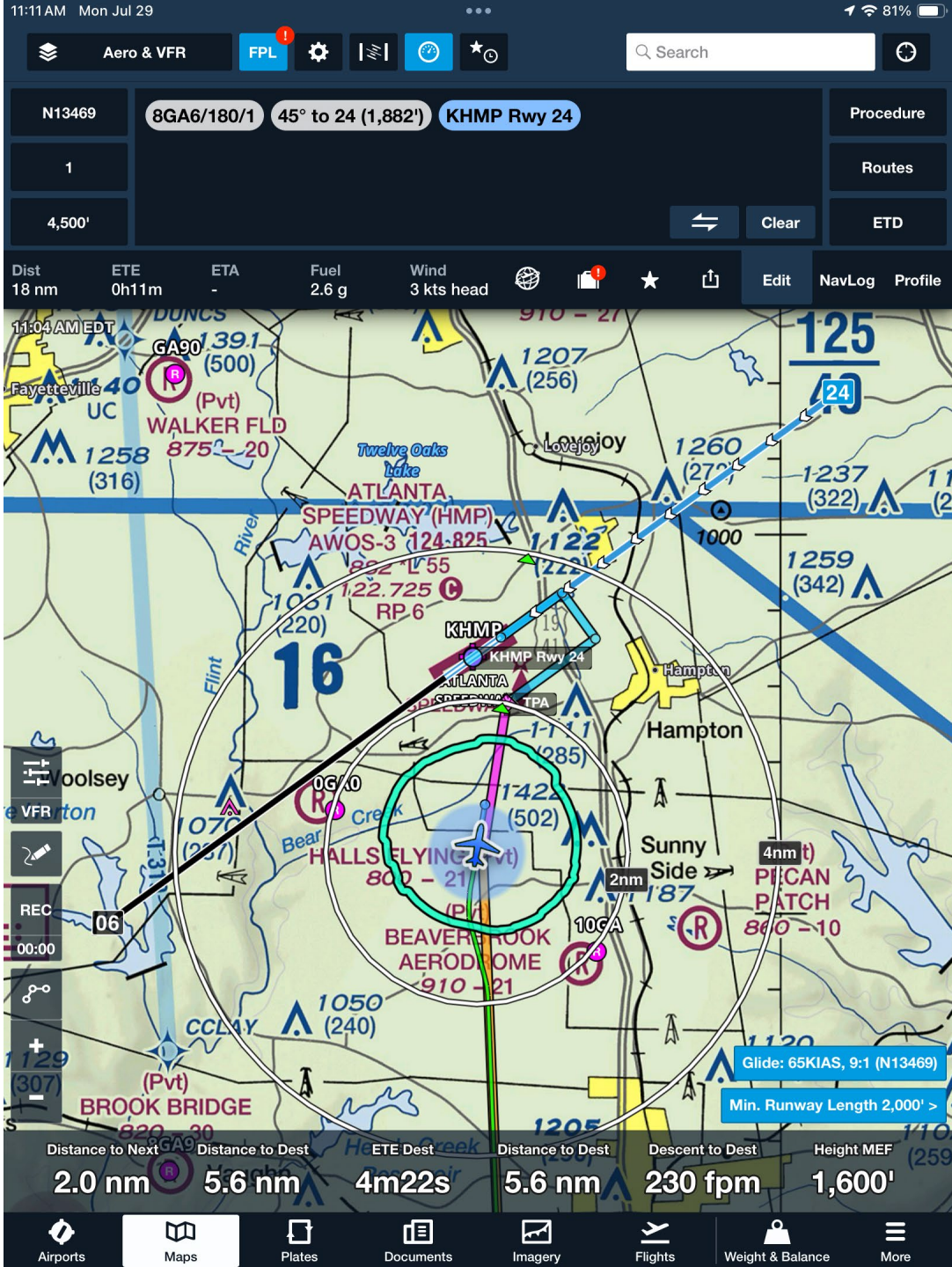
Distance to Dest is not the how far you are from the runway now...it is the length of the flight path

If you were to bring up Nearest Airport it would show 5 NM to KHMP

“Atlanta Speedway Traffic Skyhawk 13469 5 miles to the south coming on to the 45 for left downwind runway 24”



Starting 45 to Left Downwind



The screenshot displays the FPL app interface for flight planning. At the top, the status bar shows the time as 11:12 AM on Monday, July 29, with a battery level of 80% and cellular signal strength. The app's header includes the title "Aero & VFR" and a search bar. Below the header, the flight details for N13469 are shown, including the route "8GA6/180/1", the altitude "45° to 24 (1,882')", and the destination "KHMP Rwy 24". The flight number "1" and the altitude "4,500'" are also displayed. The interface includes a sidebar with various icons for navigation, a map of the Atlanta area showing the flight path, and a bottom section with flight metrics.

Flight Details:

- Flight Number: N13469
- Route: 8GA6/180/1
- Altitude: 45° to 24 (1,882')
- Destination: KHMP Rwy 24
- Flight Number: 1
- Altitude: 4,500'

Map and Navigation:

- Map shows the Atlanta area with the flight path highlighted in blue.
- Key locations include Atlanta, Hampton, and Halls Flying Ranch.
- Map features include a compass, a scale bar (2nm), and a "Glide: 65KIAS, 9:1 (N13469)" indicator.

Flight Metrics:

- Distance to Next: 0.3 nm
- Distance to Dest: 3.9 nm
- ETE Dest: 2m18s
- Distance to Dest: 3.9 nm
- Descent to Dest: 440 fpm
- Height MEF: 1,600'

Bottom Bar:

- Icons for Airports, Maps, Plates, Documents, Imagery, Flights, Weight & Balance, and More.

“Atlanta Speedway Traffic Skyhawk 13469 on left downwind 24”

GUMPS Check

Gas

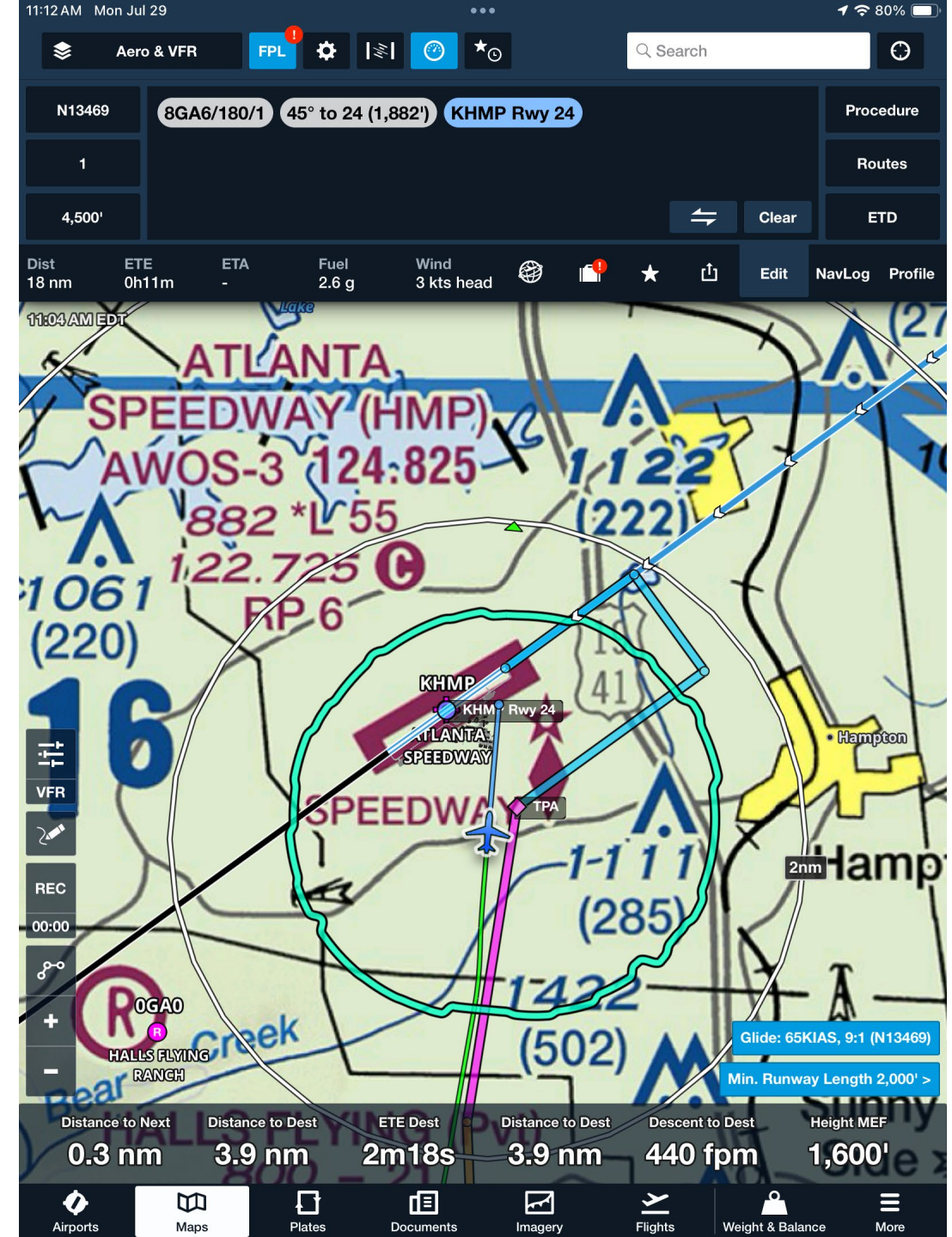
Undercarriage

Mixture

Propeller

Switches

Seat belts



Passing runway numbers

Reduce power and begin a descent.

Targets

Flaps: 10 degrees

Pitch: -5 degrees

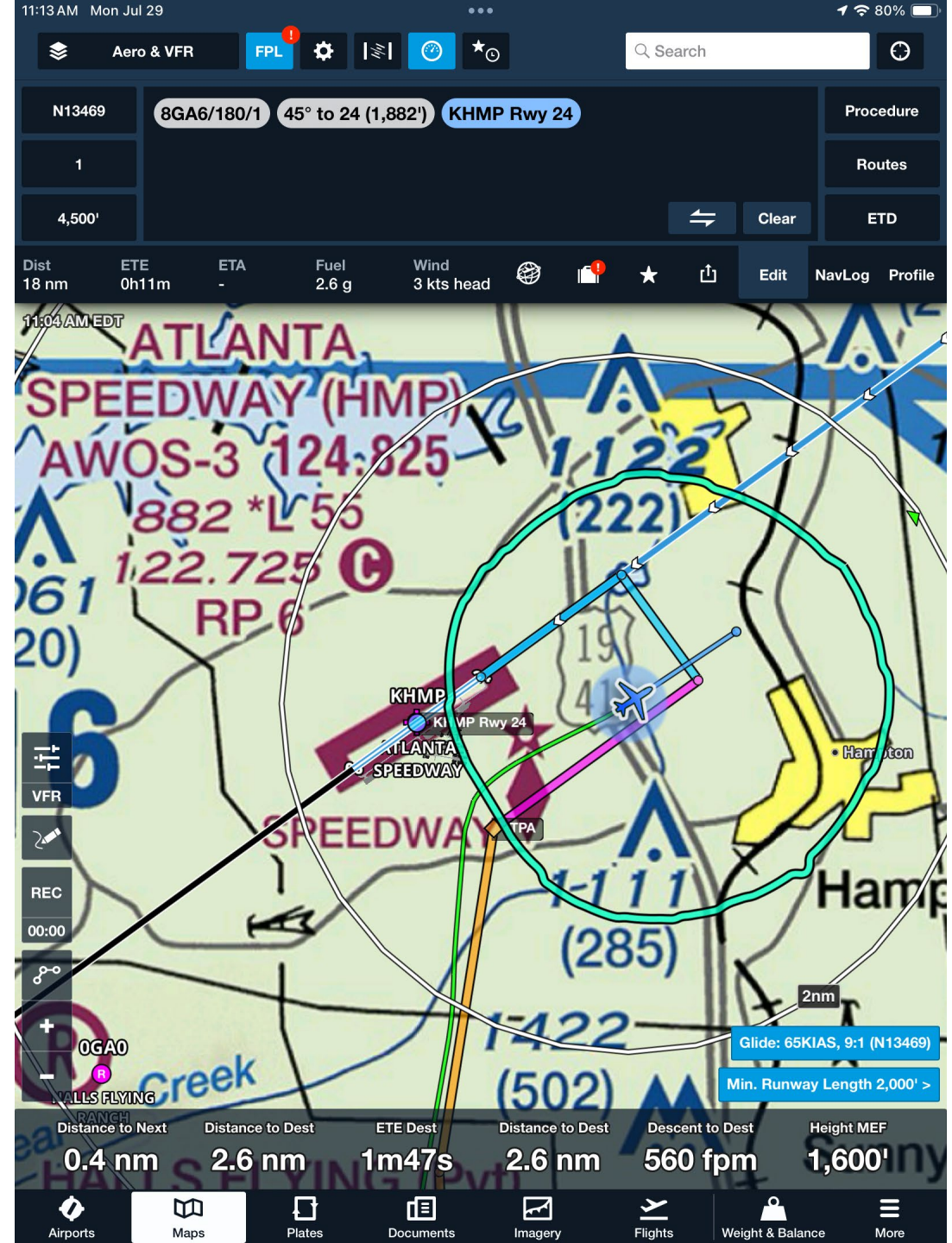
Airspeed: 85



45 Degrees from runway numbers

Targets

“Atlanta Speedway Traffic Skyhawk 13469 turning left base 24”



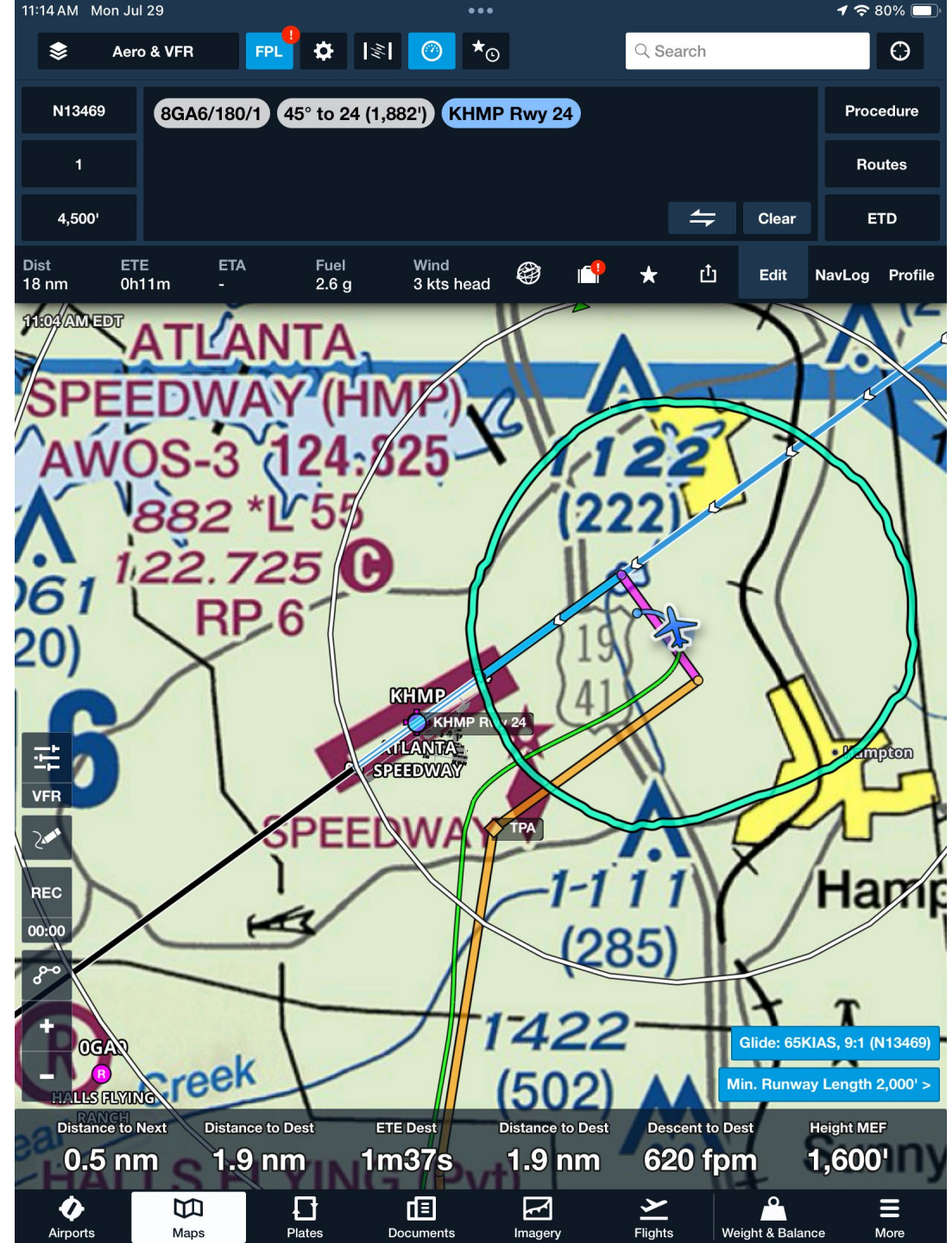
On Base

Targets

Flaps: 20 degrees

Pitch: -5 degrees

Airspeed: 75



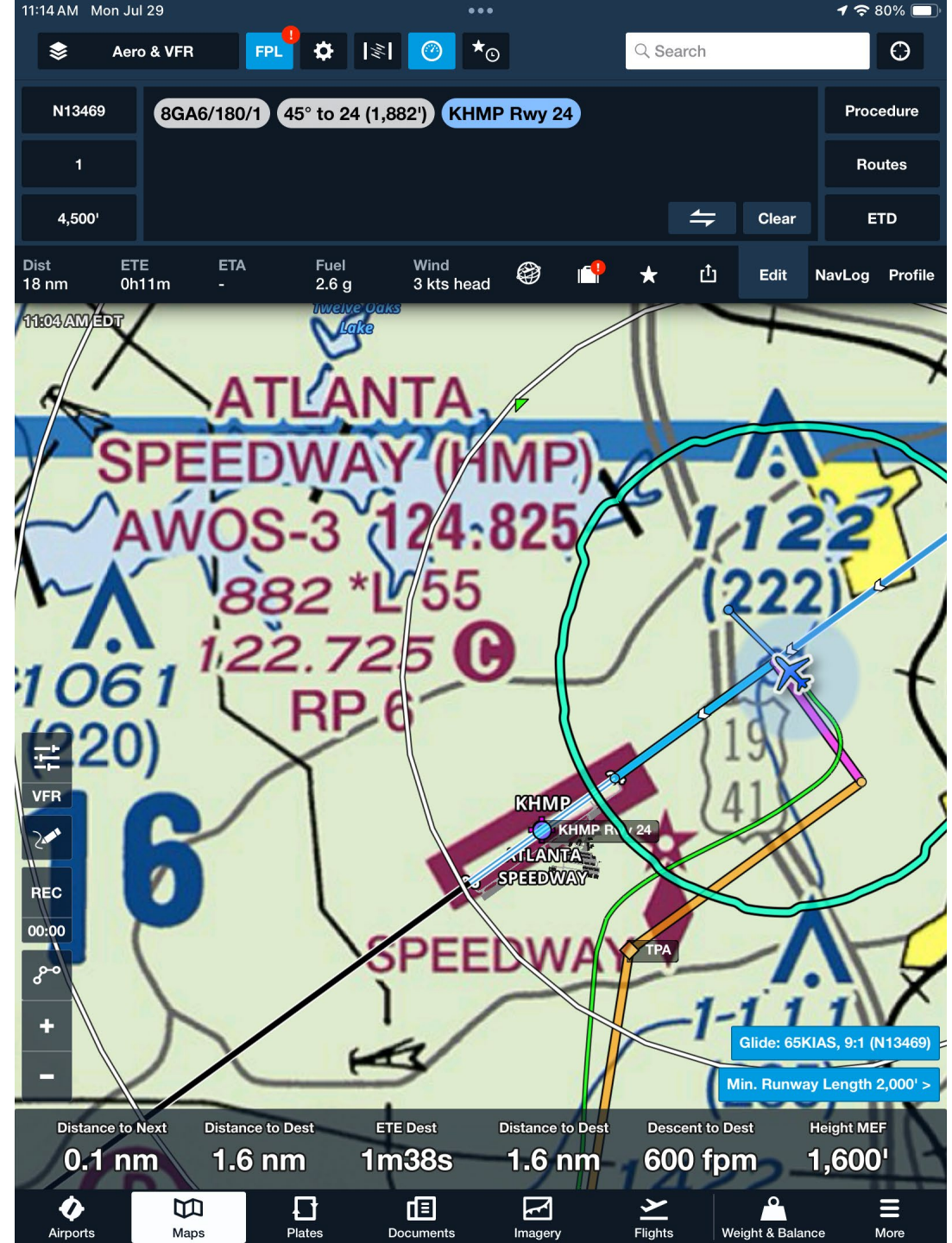
Turning Final

Targets

Make sure to look right and left for Traffic

Make sure to look at the runway for Traffic and Wildlife

“Atlanta Speedway Traffic Skyhawk 13469 turning final 24”



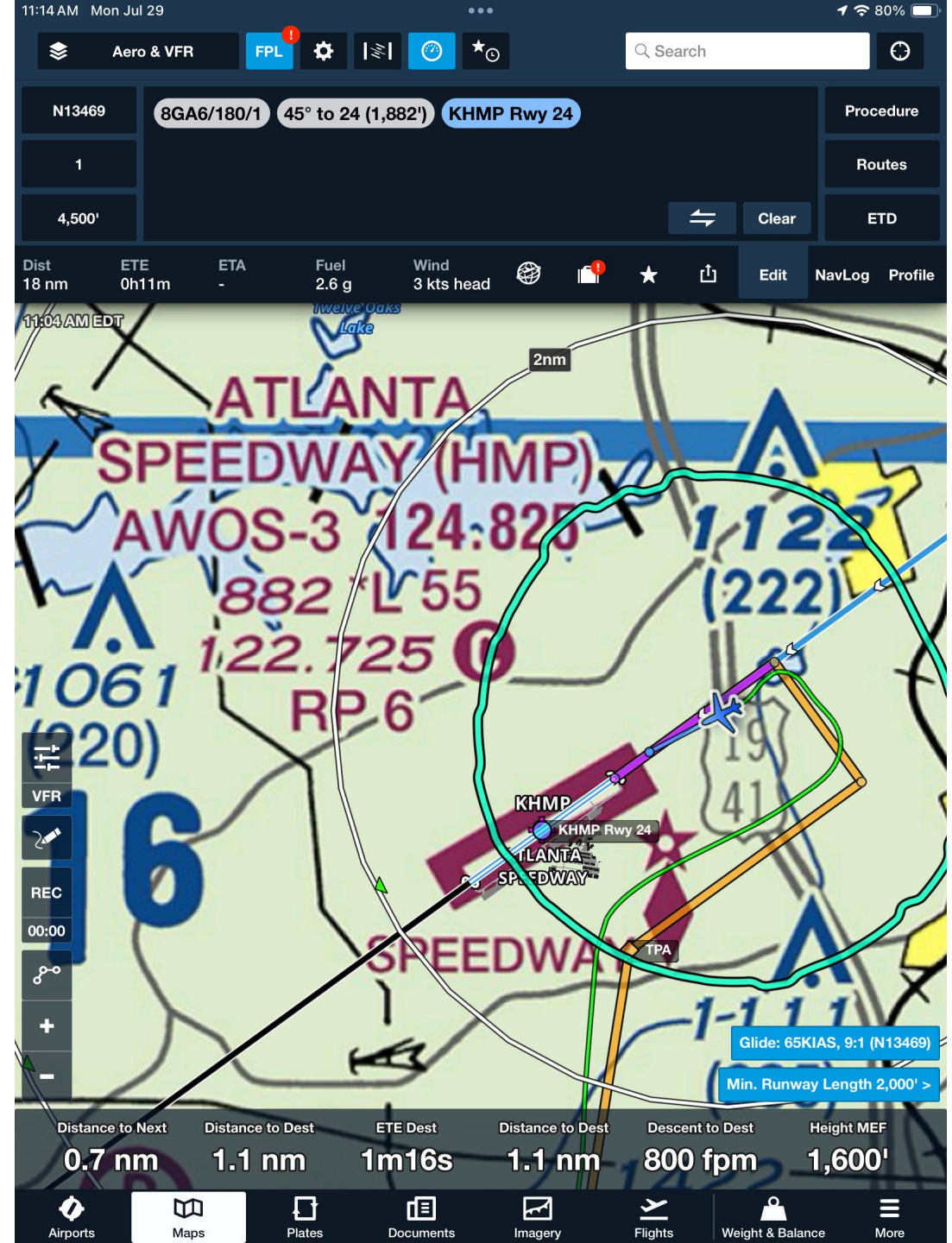
On Final

Targets

Flaps: 30 degrees

Pitch: -5 degrees

Airspeed: 65, 60 at runway edge



Pick You Aim Point

The runway numbers

OR

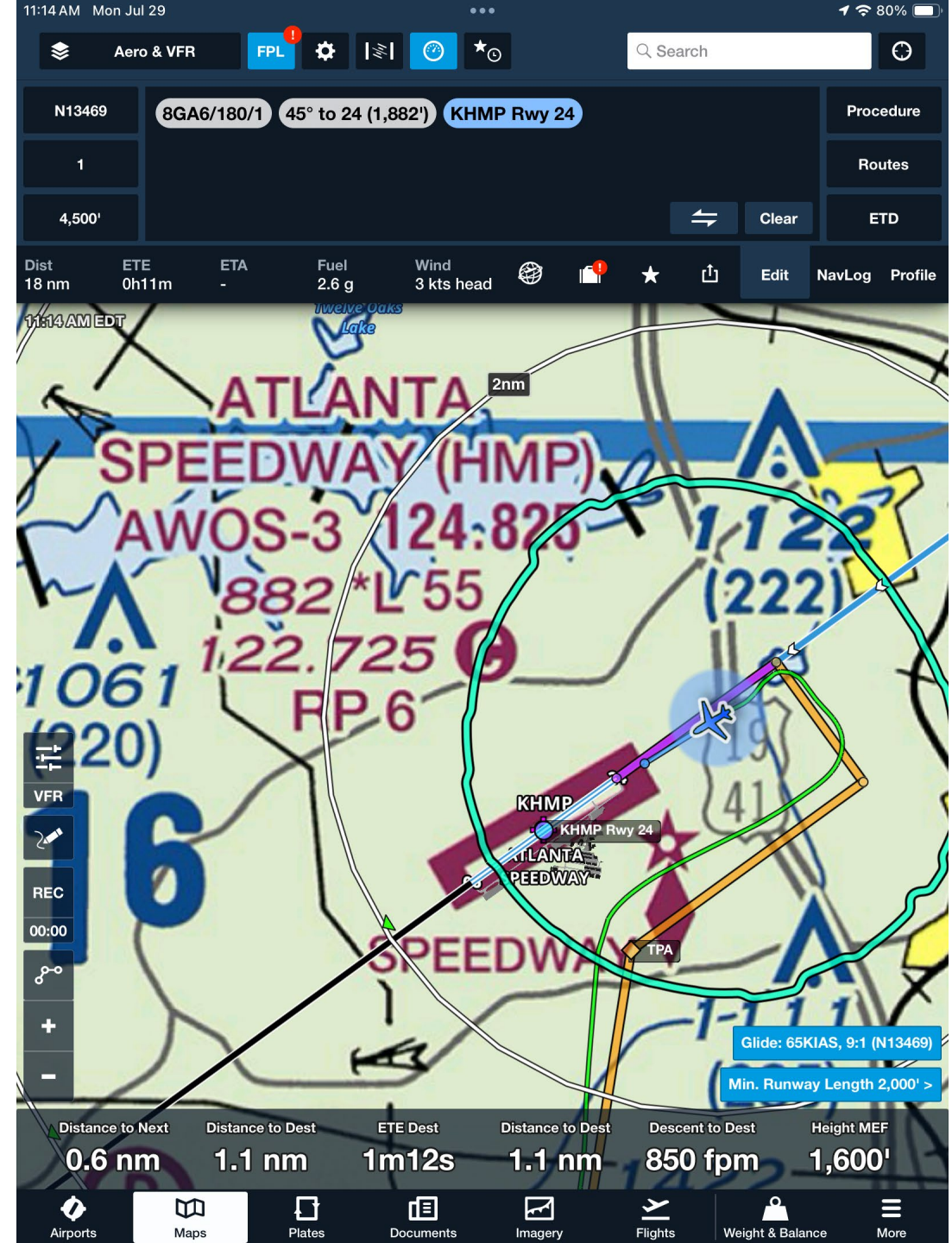
The 1000 ft markers

OR

A set of stripes

Different people have a preference but once you pick something, stick with it

Remember you will float about 200 feet past it



Be Go Around Ready

Keep in mind anything can happen at any time

If you keep in mind it is 50/50 landing vs go around you won't be scrambling at the last second

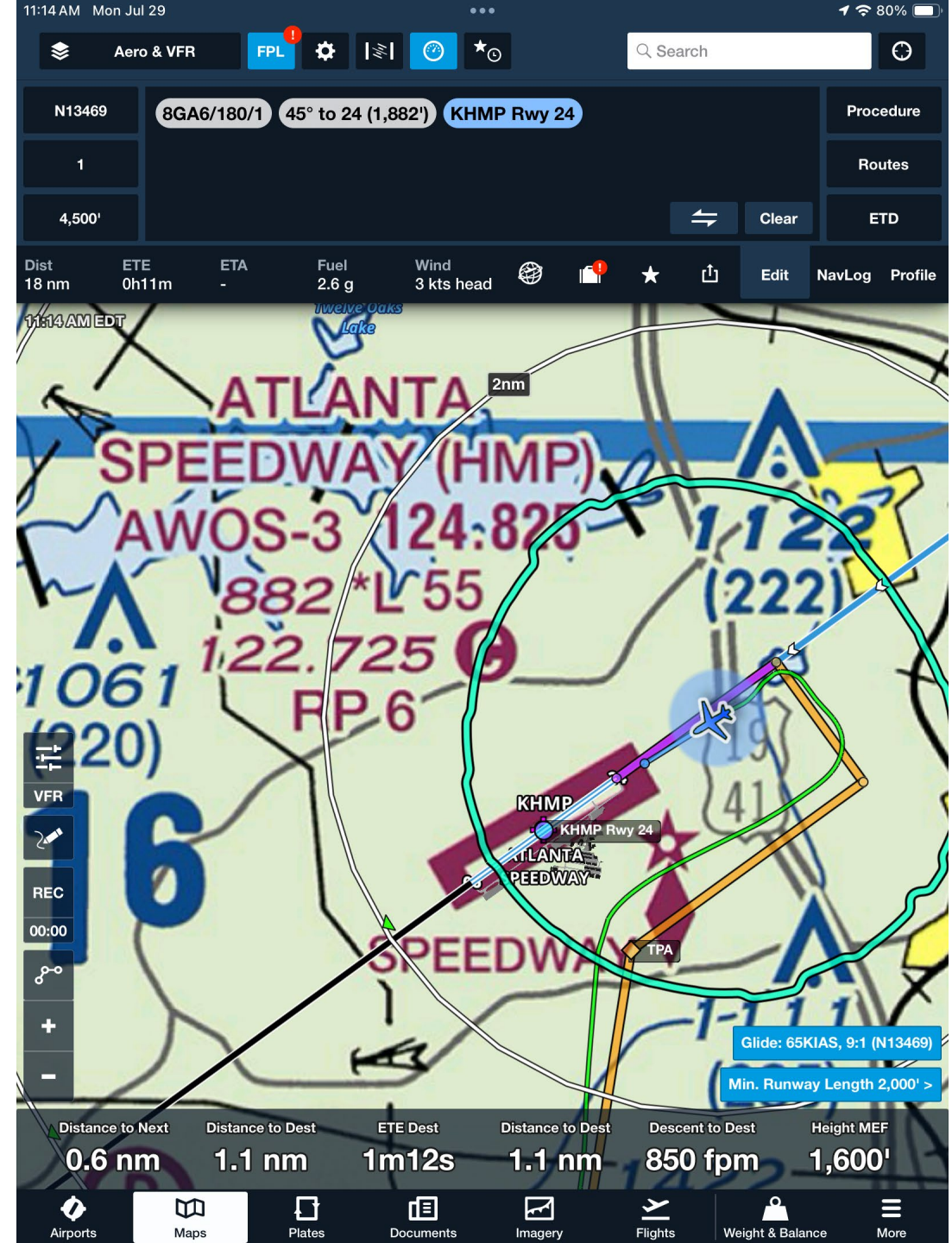
If a deer runs out...

If someone decides to take off in front of you...

ALL IN (Carb heat, throttle)

Flaps in stages...not all at once

Do not pitch up to high



Speed Height Center Nose

Speed

Fast? Pitch up

Slow? Pitch down



Speed Height Center Nose

Height

Aim point moving **up** in windshield?

Throttle **up**

Aim point moving **down** in windshield?

Throttle **down**



Speed Height Center Nose

Center

No matter what the wind is doing...

The airplanes PATH should be lined up with the center line

Correct with the yoke right or left

“Fight for center”



Flare

When you are about 10 feet over the runway...

When the runway starts going wider all of a sudden...

Pull back on the yoke to bring the nose up

Sometimes you will use a little bit of power

“Centerline slow flight”

Sometimes you will use no power

“Runway is made”



Braking without the brake pads

Pull back on the yoke

You can also bring flaps back up to put more load on the tires

If you have plenty of runway you don't need to use the brakes

The people behind you should have given you room in the first place





Any questions I can answer or
follow up later on?

Approach and Landing KHMP Runway 6



14-15 NM from KHMP

Tune to weather frequency for KHMP

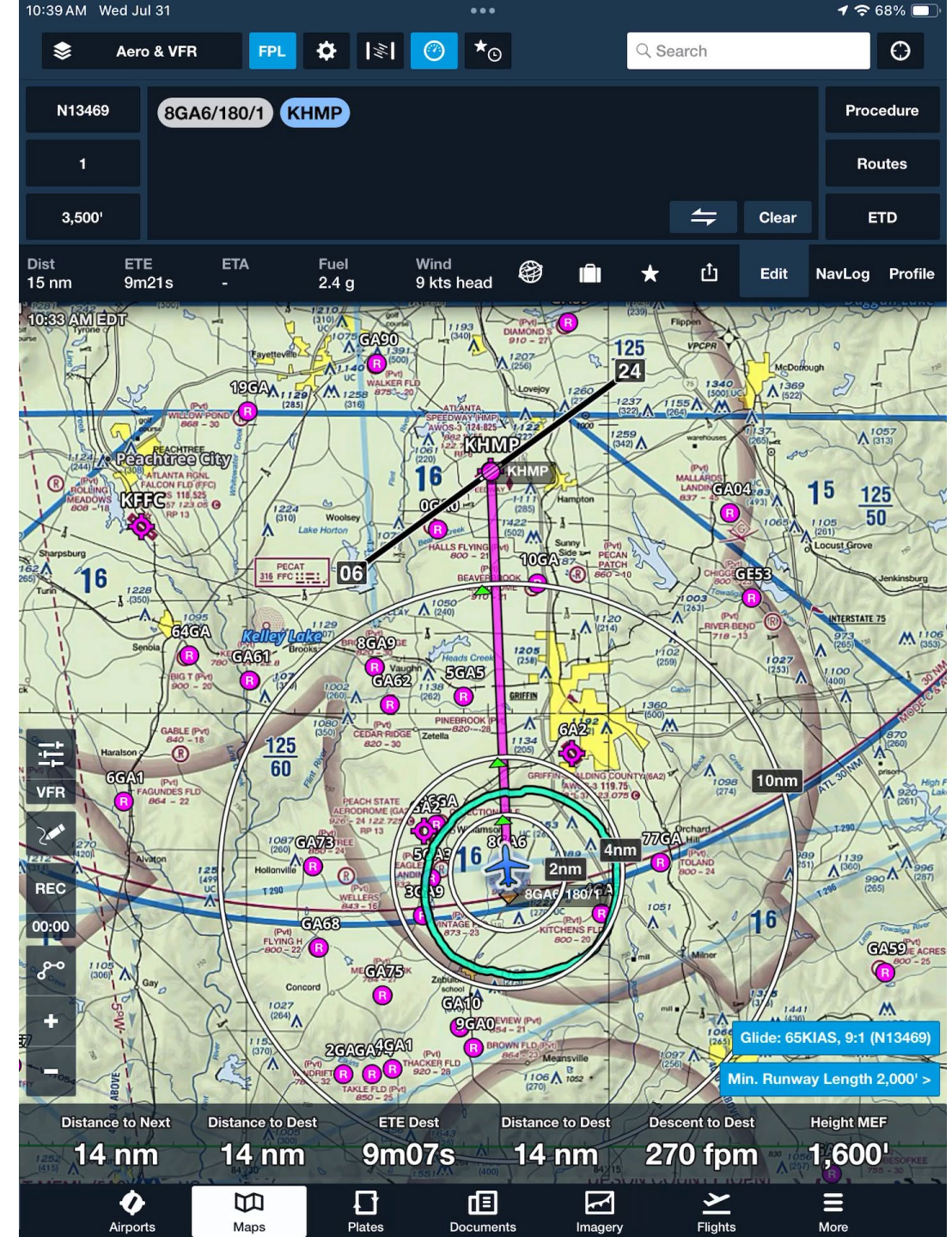
124.82

Winds are reported to be from 030, 7 kts

We will plan to use runway 6

Altimeter setting reported to be 30.17

We will set that in our dashboard

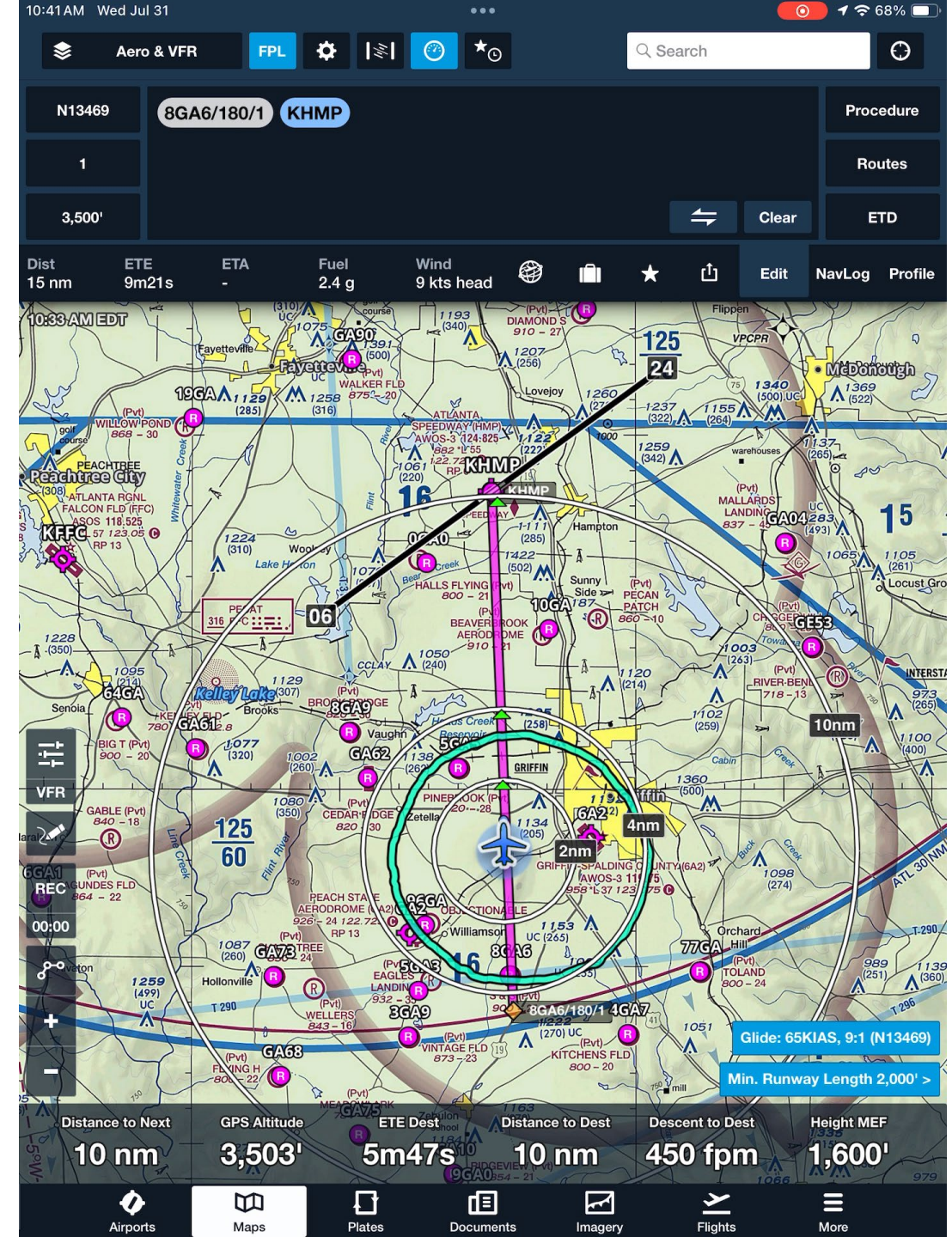


10 NM from KHMP

Tune to the common traffic frequency for KHMP 122.72

“Atlanta Speedway Traffic Skyhawk 13469 10 miles to the south intending for runway 6”

For this scenario, our altitude will be 3500 MSL



Descent Planning

The airspeed will likely be between 90-110 kts
At 90 kts the plane would fly 1.5NM per minute

We are at 3500 MSL, we need to get to 1900 MSL for pattern altitude

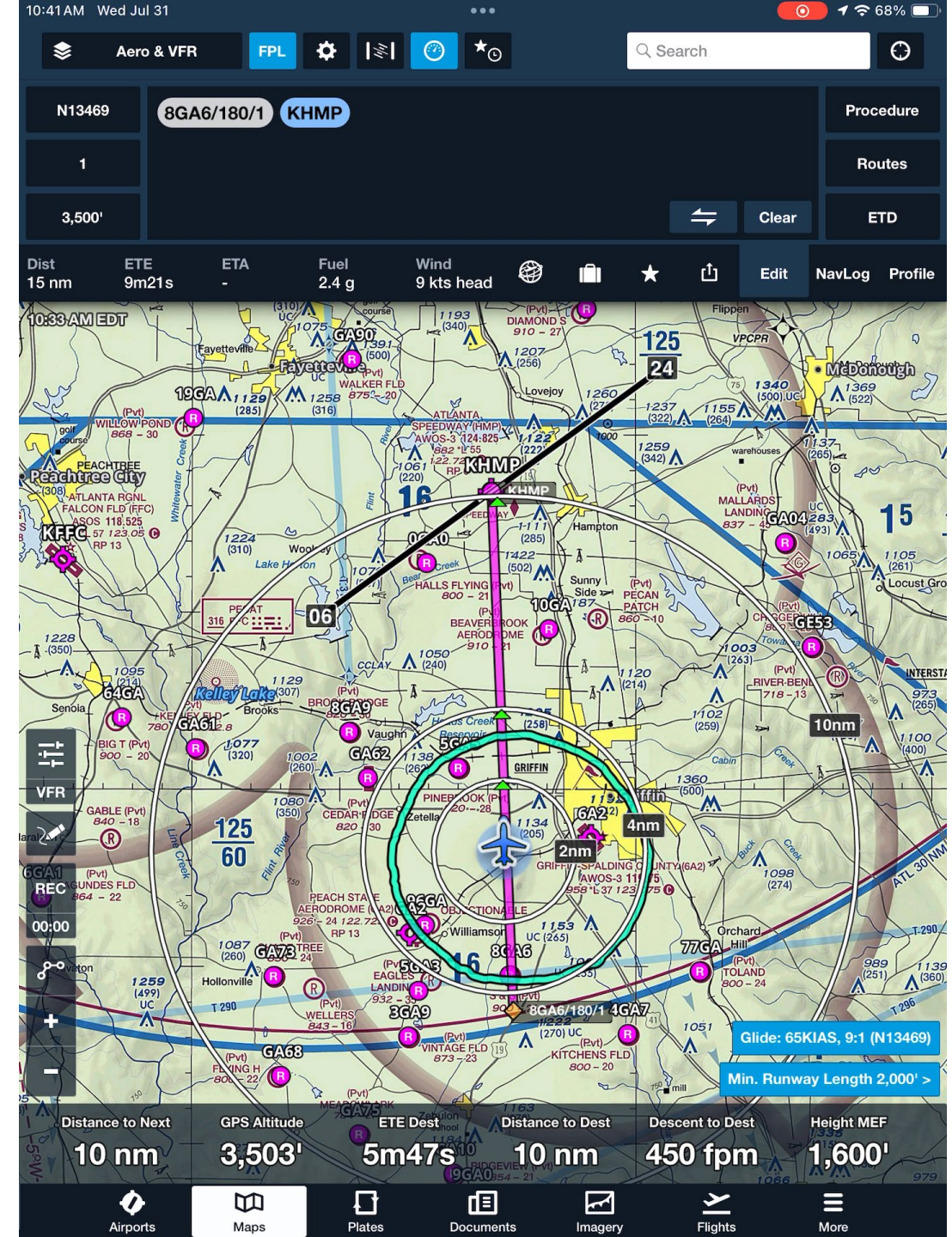
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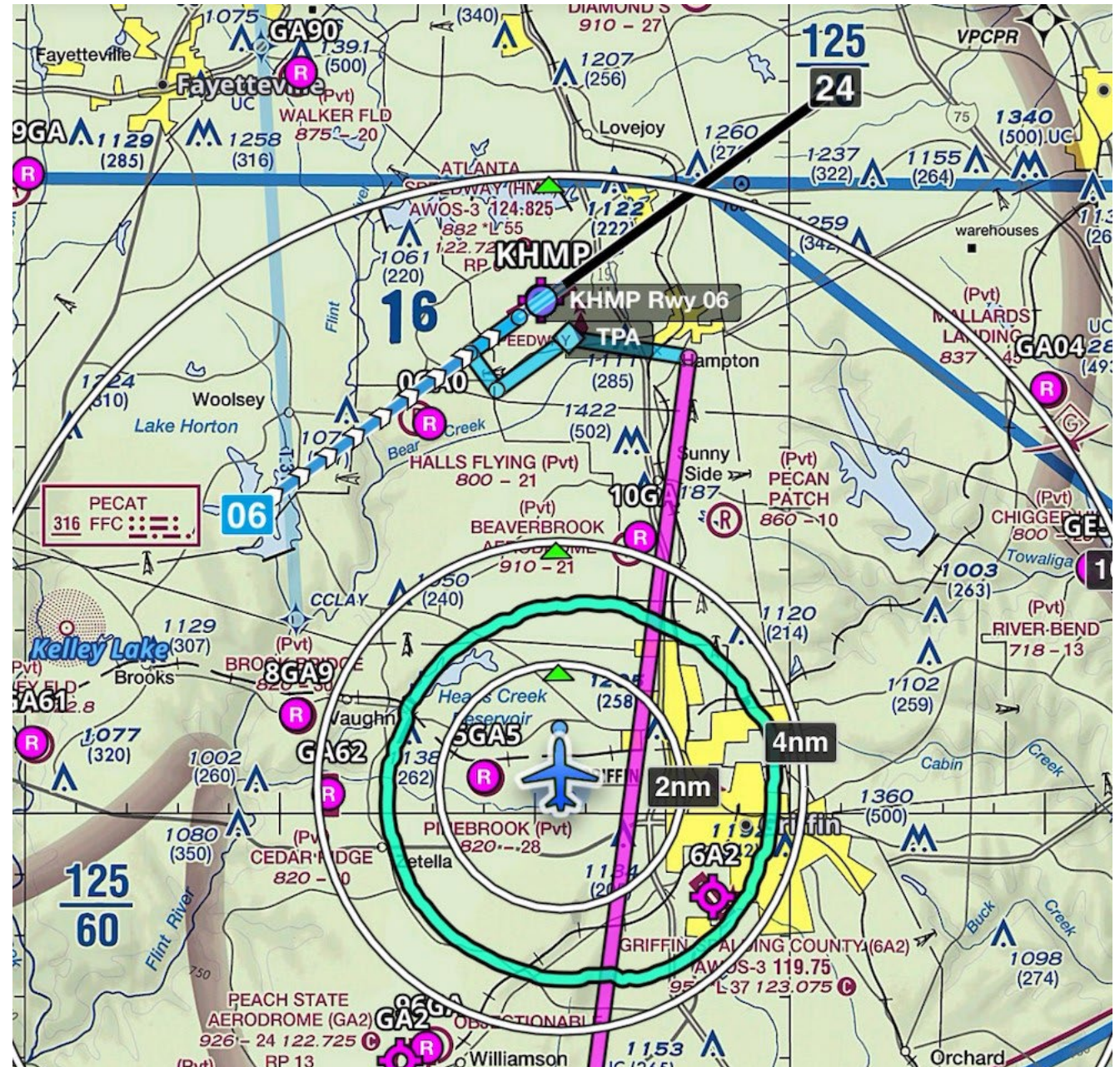
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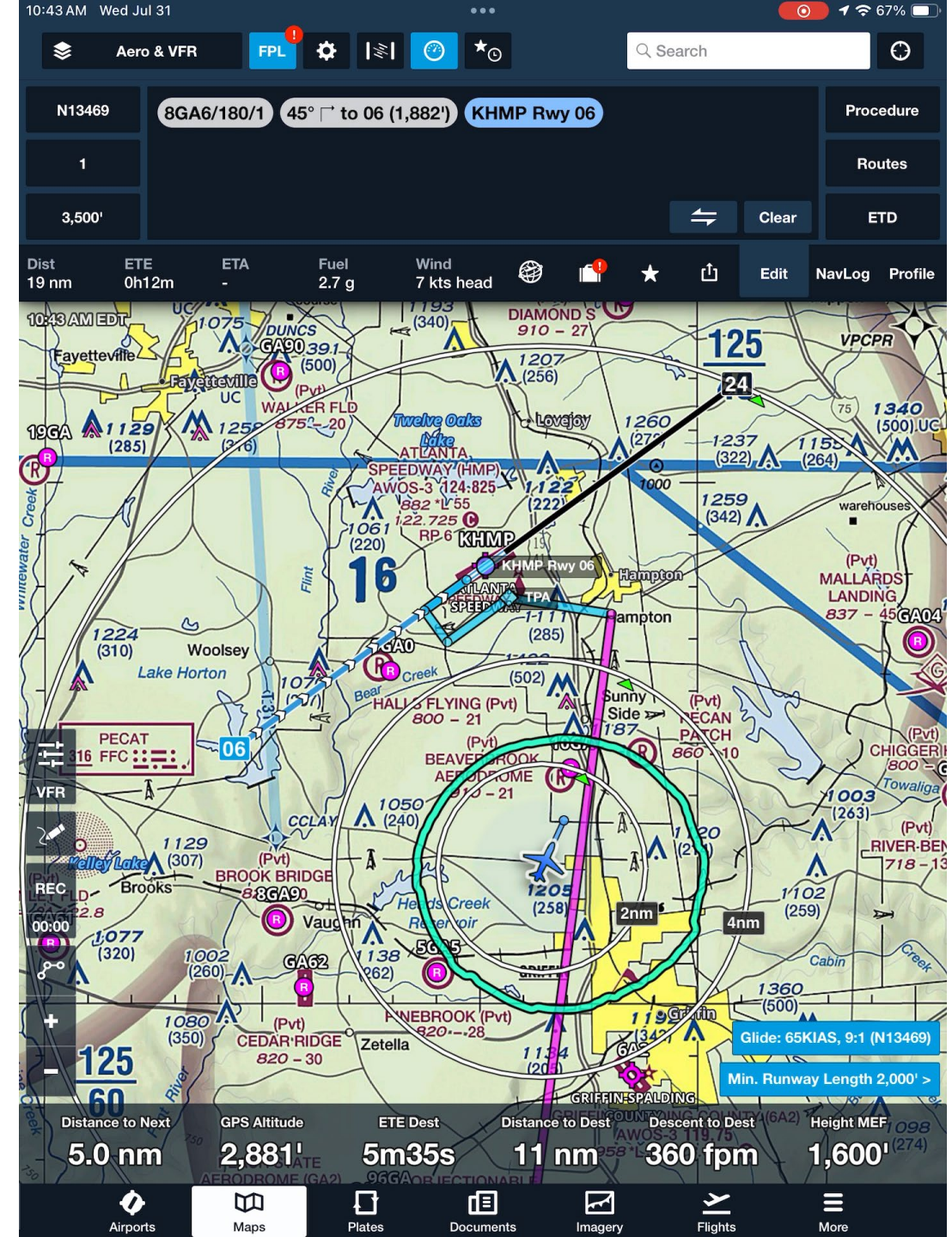


Flight path added

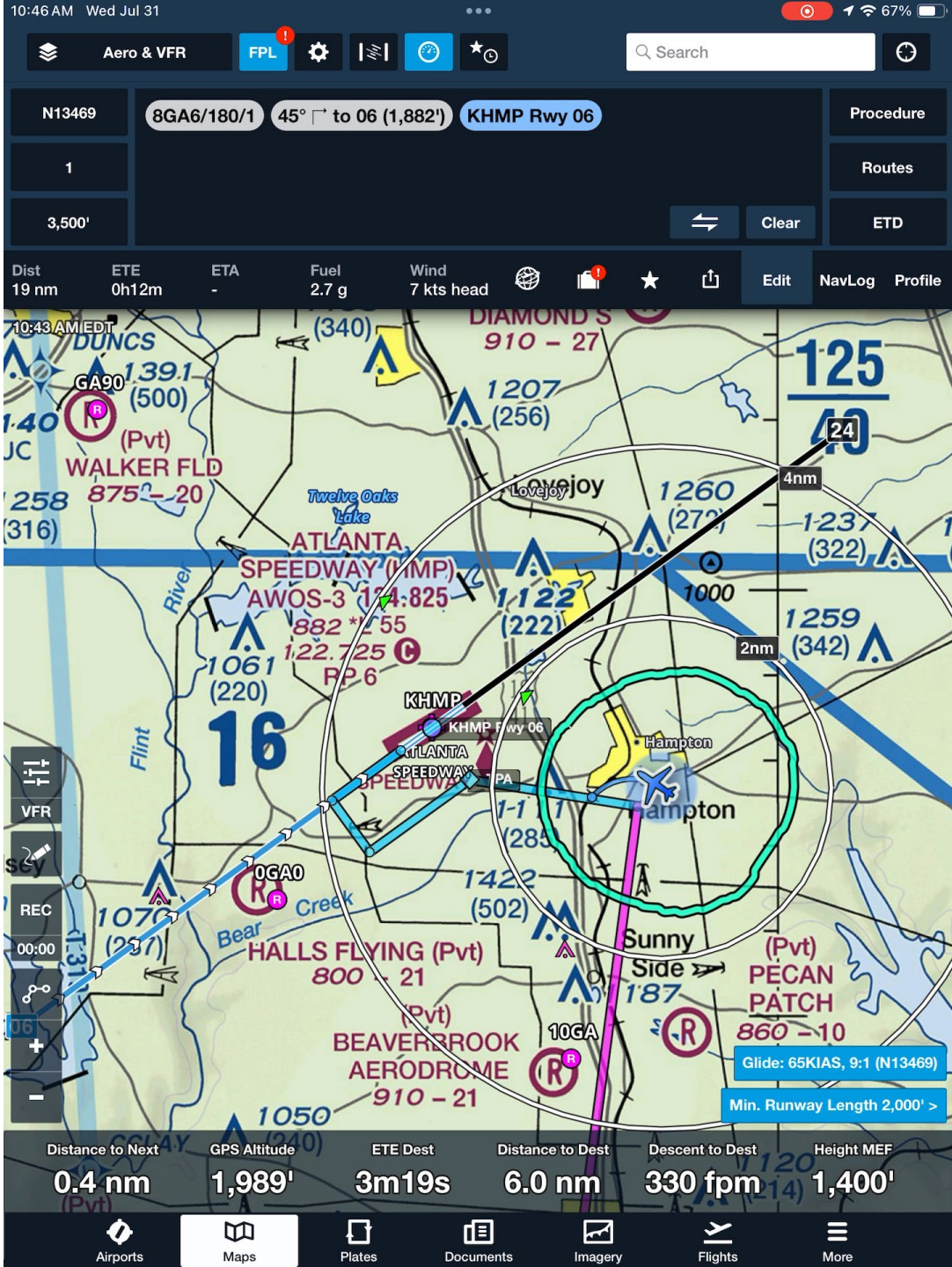


5 NM from KHMP

“Atlanta Speedway Traffic Skyhawk 13469 5 miles to the south coming on to the 45 for right downwind runway 6”



Starting 45 to Downwind



Turning to Downwind

Targets

Flaps: 0

Pitch: +5 degrees

Airspeed: whatever is reasonable

“Atlanta Speedway Traffic Skyhawk 13469 on right downwind 6”



GUMPS Check

Gas

Undercarriage

Mixture

Propeller

Switches

Seat belts



Passing runway numbers

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On Base

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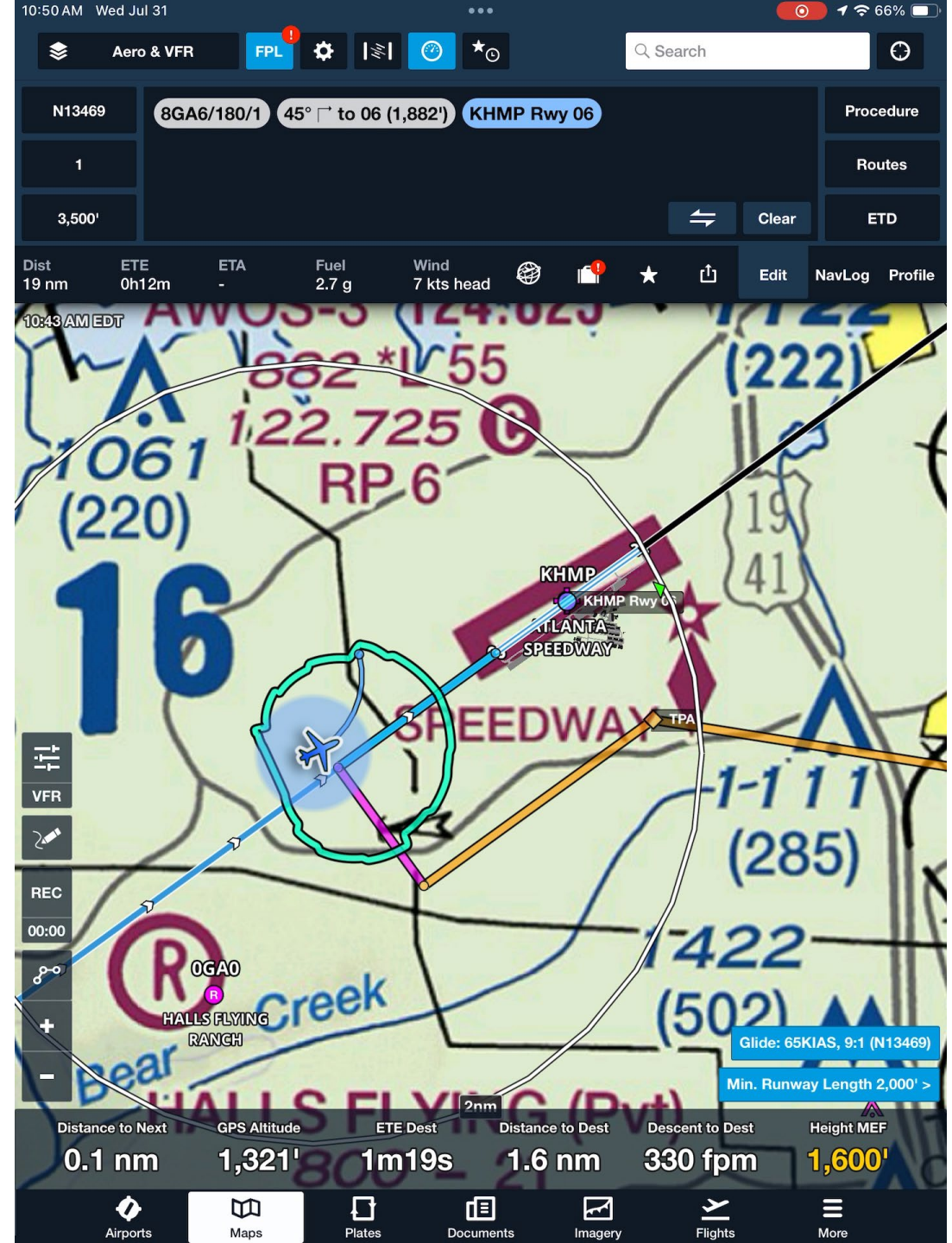
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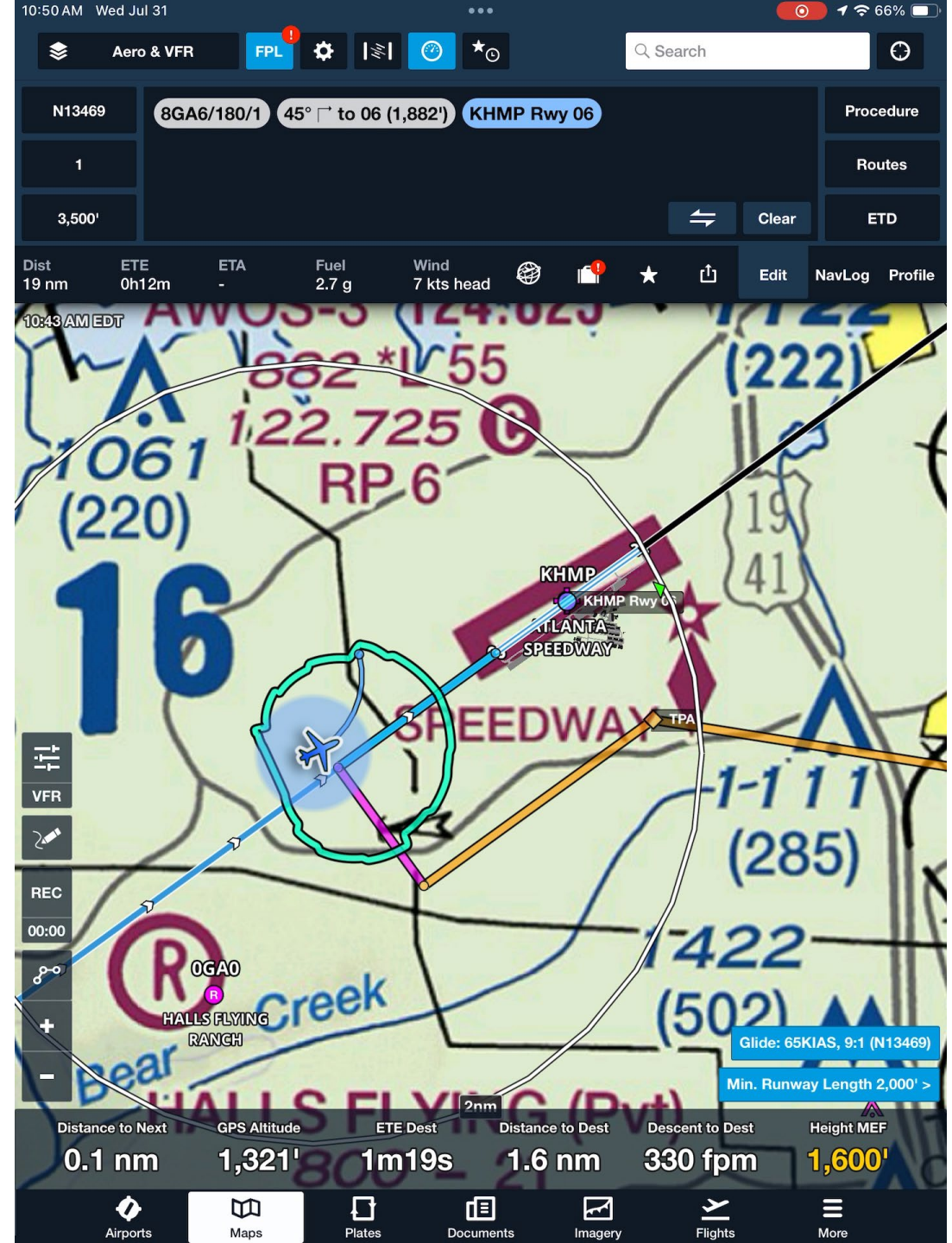
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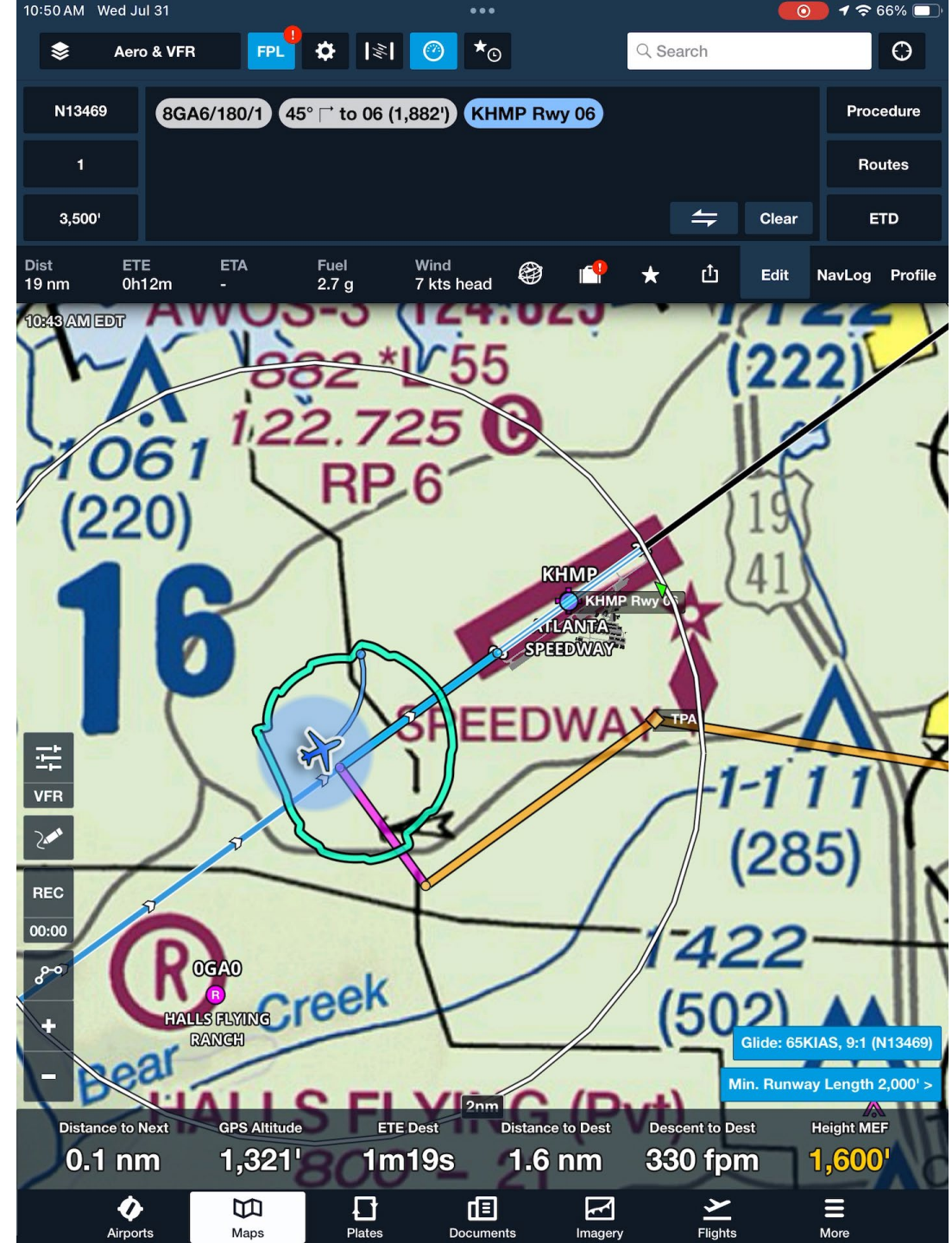
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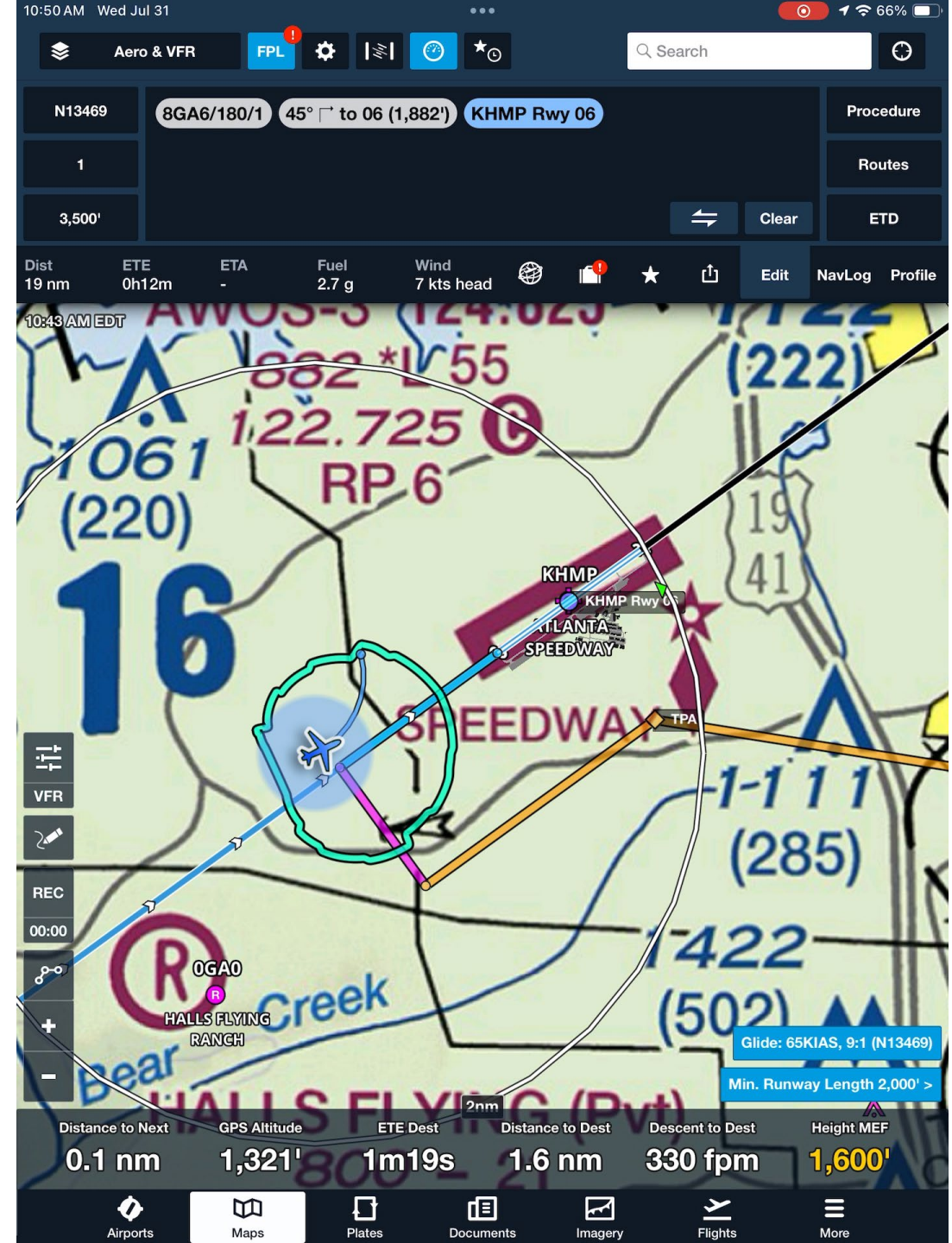
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