

Dear Applicants,

you are all scheduled for a PVT pilot check ride. This is a little homework assignment that will help you prepare for the check ride.

Enroute, you are about an hour from the nearest airport. You get a low voltage indication in the cockpit. What steps are you going to take (hint: memory items, consider diverting, check list). Then tell me if we ran the battery low, what systems and equipment would fail and what would keep working? Why?

Here is a scenario: You are flying from KGIF over a couple days to KRIL in the Rocky Mountains.

Calculate your takeoff and landing distance on a standard day, at max gross weight at KGIF.

Then calculate your cruise performance at Sea level & 8000 ft MSL including TAS & fuel burn on a standard day. What will your IAS be relative to the TAS- Higher, lower or the same at both altitudes? Why? (hint: think about how air density affects the airspeed indicator and how TAS is calculated).

Calculate your takeoff and landing distance at KRIL at Max Gross weight on a standard day and also at 35 degrees Celsius. Why is the distance for takeoff longer (consider effects on engine, prop, airfoil, TAS vs IAS).. Why is distance longer for landing (consider we can land power off so the propeller and engine are no longer a factor)?

Finally, we are at KRIL on a hot day. It is the hottest part of the day and we have two passengers and a friend wants to know if we can also take some wedding gifts that weigh 100 + lbs back to Florida. We are deciding how much fuel we can take to get to our next airport. We have 24 hours to depart but some of the passengers are very eager to leave ASAP.

- 1) What can we do to improve our performance and safety for takeoff and climb? Consider the following options:
- 2) do we need to adjust the fuel mixture before takeoff? if so, how do we do that and at what power setting will we use to adjust the mixture? How does this change our performance and why?
- 3) If we have the option to take off in after noon or early the next morning, which do we choose and why?
- 4) How are we going to load the airplane with passengers, luggage and fuel to maximize our performance? Should we leave someone or something behind?
- 5) What IAS are we going to use for V_r for take-off? How about the IAS for landing at this high altitude airport?

Consider taking a night flight. Walk through the expanded PAVE check list below and write out all the things you would do that **are DIFFERENT or ADDITIONAL** to how you would prepare for a day time flight.

List the more significant risks and challenges of night flying and how you would handle them. Consider the risks related to take off, enroute, terrain, illusions of flight, approach and landing.

When the examiner ask you how you prepare for a flight or cross country trip, use the following expanded PAVE check list to help you cover everything.

Pilot-----

Currency & Proficiency

Documents- Medical, Pilot cert, Gov ID

IMSAFE

Other Human Factors- Illusion of flight

Aircraft--

AROW

AVIATE-A

91.205 requirements day VFR, night VFR, IFR

Weight and Balance for current flight

Pre-flight

enVironment-

Navigation Log and Performance charts

Airspace, Obstacles and Terrain

Airport Runways, Taxi diagrams, Lighting, Frequencies, services

Notams

Weather

Known ATC delays

Runway lengths

Alternates

Fuel Requirements

Take off/Landing distances

External Factors Everything Else, Other Risks

To help you, I have attached a training syllabus. I would recommend you read the chapter on aircraft performance, Night Operations and illusions of flight plus any other resources.