



Flight Training & Aircraft Rental — Smith Field Airport

PRE-SOLO KNOWLEDGE TEST
Diamond Eclipse DA20-C1

Name _____

Date _____

1 List the airspeeds and their definitions for your airplane.

	Airspeed KIAS	Visual Indication on the Airspeed Indicator (color)	Definition
V _{SO}	_____	_____	_____
V _{S1}	_____	_____	_____
V _R	_____	_____	_____
V _{X T/O}	_____	_____	_____
V _{X CRUISE}	_____	_____	_____
V _{Y T/O}	_____	_____	_____
V _{Y CRUISE}	_____	_____	_____
V _{FE T/O}	_____	_____	_____
V _{FE LND}	_____	_____	_____
V _A	_____	_____	_____
V _{NO}	_____	_____	_____
V _{NE}	_____	_____	_____

2. Calculate the gross weight and Center of Gravity for this aircraft with the aircraft having full tanks and you as the pilot.

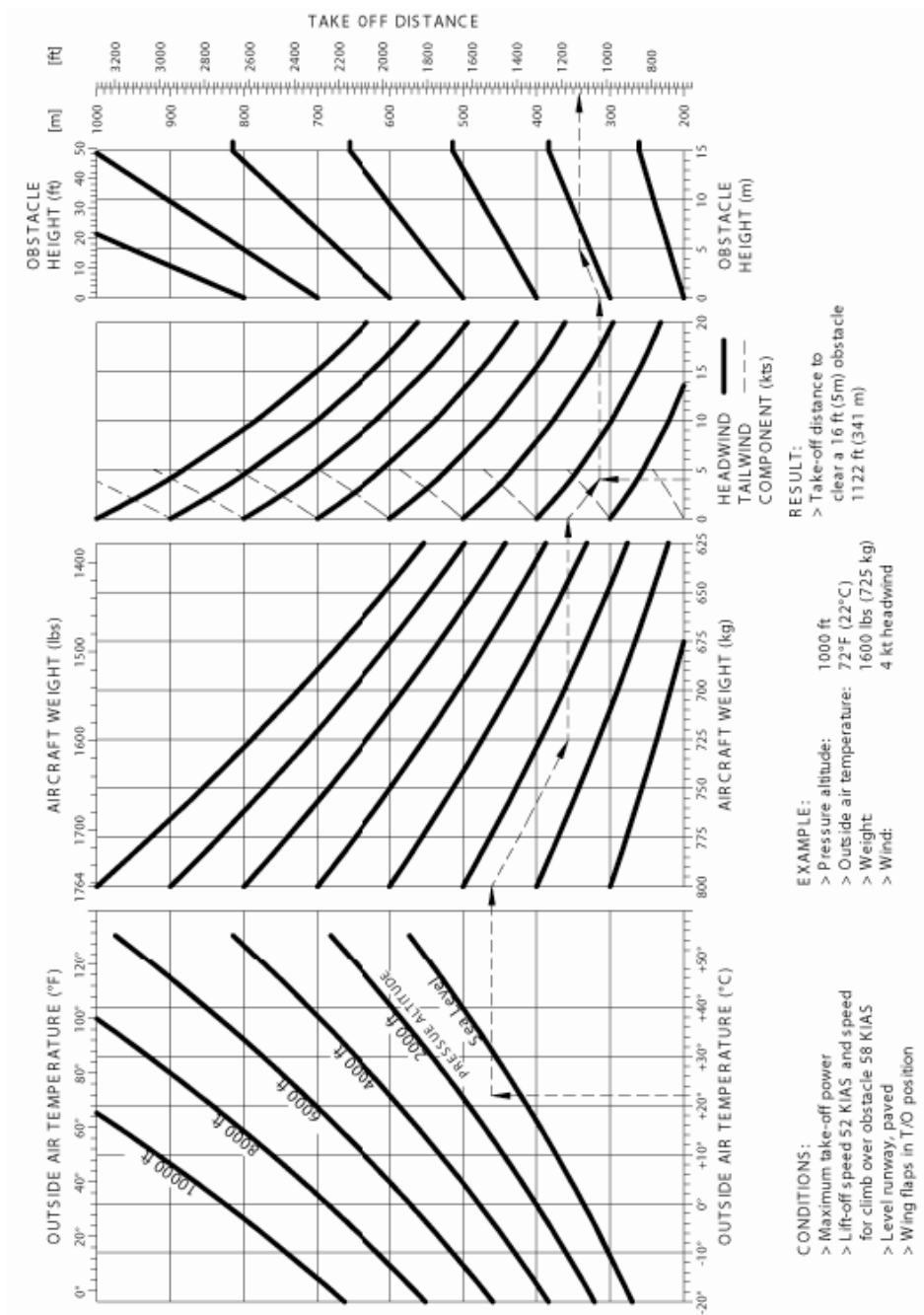
WEIGHT AND BALANCE
DIAMOND DA20-C1 N476DC
 Serial Number C0276

	Weight	x Arm	= Moment	
1. Empty Weight	1202.0 lbs.	x 8.34 in.	= 10024.7 in lbs.	
2. Pilot & Passenger	_____	x 5.63 in.	= _____	Center of Gravity= $\frac{\text{Total Moment}}{\text{Total Weight}}$ Limits: Gross Weight: 1764 lbs. (Take off & Landing) Center of Gravity: 7.95 in. – 12.48 in.
3. Baggage (44lbs max)	_____	x 32.44 in.	= _____	
4. Fuel (6.01 lbs/gal) (24 gal. usable)	_____	x 32.44 in.	= _____	
5. Total	_____		= _____	

3 Fuel: Maximum capacity _____ gallons, of which _____ gallons is usable.
 Rate of fuel consumption _____ gal/hr.
 Minimum fuel required at the start of this solo flight _____.
 Grade of fuel used by this aircraft _____.
 Color of the fuel used by this aircraft _____.

- 4 Oil Maximum capacity of oil _____ qts.
 Minimum capacity of oil at the start of solo flight _____ qts.
 Grade of oil used in this aircraft _____
5. What is the takeoff ground roll for this aircraft today?
 Pressure Altitude _____
 Outside Air Temp _____
 Aircraft Weight _____ lbs
 Head Wind Component _____
 Obstacle Height Zero feet
 Ground Roll _____

SENENICH PROPELLER W69EK7-63, W69EK7-63G and W69EK-63



6 What is the ground roll distance for a landing today? _____

5.3.11. Landing Distance

Conditions: - Throttle: Idle

- Maximum T/O Weight

- Approach Speed 55 KIAS

- Level Runway, paved

- Wing Flaps in Landing position (LDG)

- Standard Setting, MSL

Landing distance over a 50 ft (15 m) obstacle: approx. 1360 ft (414m)

Landing roll distance: approx. 661 ft (201m)

Height above	ft.	0	1000	2000	3000	4000	5000	6000	7000
	MSL (m)	(0)	(305)	(610)	(914)	(1219)	(1524)	(1829)	(2134)
Landing Distance	ft.	1360	1387	1417	1447	1478	1511	1545	1580
	(m)	415	423	432	441	450	461	471	482
Landing Roll Distance	ft.	661	680	701	722	744	767	791	815
	(m)	201	207	214	220	227	234	241	248

7 What would be an indication to use Alternate Air? _____

8 What are the radio frequencies used at this airport?

_____ UNICOM

_____ ATIS

_____ Fort Wayne International Tower Frequency

_____ Approach Control

_____ Emergency

9 What airplane certificates and documents must be on board your airplane prior to every flight?

A _____

R _____

O _____

W _____

10 What personal documents and endorsements must you have before beginning a solo flight?

11 Who is directly responsible and is the final authority as to the operation of your airplane when you are flying solo?

12 Except for takeoff and landing, what are the minimum safe altitudes you may operate your airplane?

Over congested area _____ feet above the highest obstacle.

Other than congested area _____ feet above the surface or away from any person, vessel, vehicle, or structure.

- 13 Explain the actions you would take if the airplane engine failed in the following situations:
- a. During the takeoff roll _____

- b. During the takeoff climb at an altitude of 1200 feet msl? _____

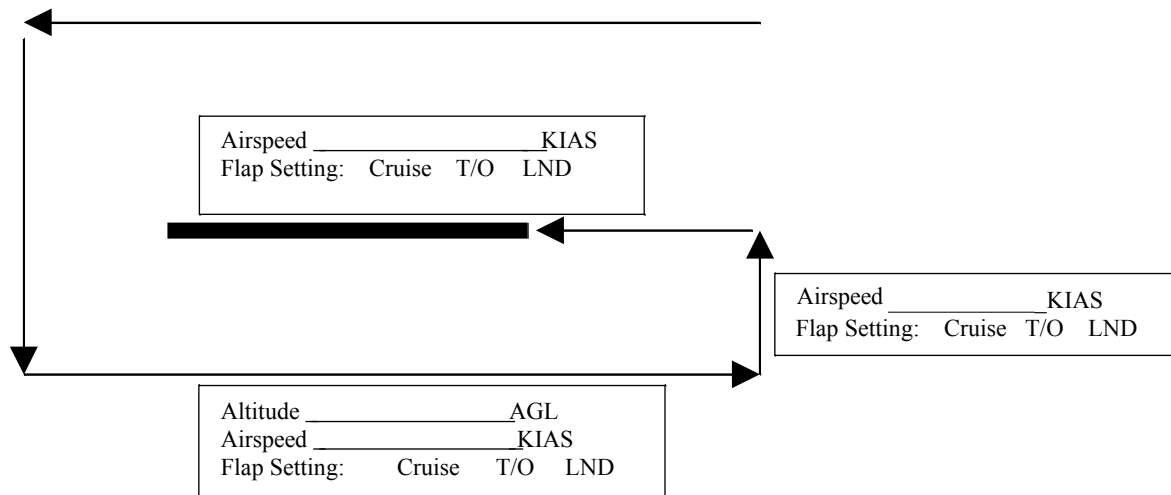
- 14 What is the day-VFR fuel requirement? What is the minimum amount of fuel you must have on board in minutes _____? In gallons? _____ Fuel gauge? _____
- 15 What is the maximum number of passengers you can have in your airplane when you are flying solo in the pattern doing takeoffs and landings? _____
- 16 You have been authorized to solo the Diamond DA-20 and want to solo the Cessna 172. What needs to be done before you can solo the Cessna 172? _____
- 17 Your approval to solo the Diamond DA-20 was today. For how many days is this approval valid? _____
- 18 What is density altitude at Smith Field if the elevation is 834 ft, the barometric pressure is 29.62 inches of mercury, and the temperature is 95° F?
Pressure Altitude _____ Density Altitude _____
How will this density altitude affect the performance of this airplane? _____

- 19 What are the weather minimums you need to fly solo per the FAA?
FAA Visibility _____ Ceiling Height _____
Max Wind Velocity _____ Cross Wind Component _____
- What is a stall? _____

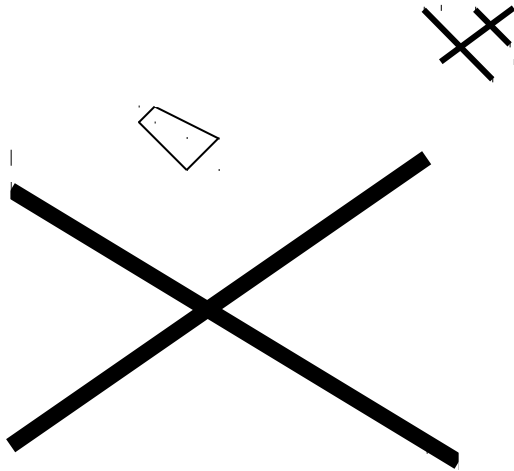
How will you recognize when the aircraft is about to stall? _____

How do you recover? _____

- 21 Label each leg of the traffic pattern (upwind, crosswind, downwind, base, final).
Picture of the traffic pattern with questions about airspeed and flap settings for different legs.



22. From the aircraft position draw the correct flight path to land on the appropriate runway.
Picture of the runways with an airplane and the direction of the wind.



23. From the aircraft position draw the correct flight path to land on the appropriate runway.
Picture of the runways with an airplane and the direction of the wind going in an opposite direction from the previous question .

