



Eagle Sport Aviation Club

Schleicher ASK-21 Written Exam

Name: _____

Answer the following questions in regards to the Schleicher ASK – 21. Use all available textual resources as necessary.

Technical Specifications

When rigging, it is important to know the size of the aircraft and the area needed.

1. What is the approximate span?
2. What is the approximate length?
3. What is the height of the tail?
4. What is the empty weight?
5. What is the maximum gross weight?
6. What is the weight of each wing?

Speeds

7. Define V_{NE} , and specify the speed in knots.
8. Define V_A , and specify this speed in knots.
9. Define V_{NO} , and specify this speed in knots.
10. Define V_{SO} , and specify this speed in knots.

Performance

As knowledge of performance is increasingly pertinent to higher performing gliders, these questions are directed towards the performance characteristics of the ASK -21 and aircraft in general.

11. What happens to V_A speed as weight decreases?
12. What is the published L/D value for the ASK – 21?
13. What happens to the best L/D value as weight increases?
14. At what speed does the best L/D occur in still air, solo?
15. What happens to the best L/D speed as weight increases?
16. What will happen to minimum sink speed and vertical sinking speed as weight increases?
17. What are the positive and negative limit load factors?
18. What are the maximum and minimum forward pilot weights?
19. The addition of a lead disc will decrease the forward pilot weight by how much (lb / disc).

Rigging

20. What is the minimum number of people recommended? (with and without stands)
21. Which wing is placed in first? (describe how you can determine this by looking at the spar)
22. Describe some of the possibilities of relieving the up pressure on the wing during assembly.
23. How many main spar pins are necessary?
24. Where are the drag pins located and how many are there?
25. How many control connections are behind the spars and what controls do they connect?

26. The horizontal tail is loaded by sliding the horizontal tail aft or forward?
27. How many screws secure the tail? How do you know when the tail is secured with the bolt(s)?
28. Where are the batteries located?

De-Rigging

29. How many people are recommended for de-rigging? (with and without stands)
30. Must the controls be disconnected before the wings can be removed?
31. To aid in removing the drag pins, the wings should be moved in which manner? (forward/aft or up/down)
32. Which wing will be removed first?
33. Removing the spar pins can be aided by moving the wing in which fashion? (forward/aft or up/down)
34. Should the horizontal tail be removed prior to removing the wings? Explain your answer.
25. When loading the wings in the trailer, the root goes in first. The wing should be rotated such that the leading edge is (down or up)
26. What locks the wings in place in the trailer?
27. Can the wing be scratched by the fuselage and other pins while loading it into the trailer?
28. How is the fuselage secured in the trailer?
29. How is the horizontal tail secured in the trailer?

- 30. How are the seatbelts secured in the trailer?
- 31. How is the trailer secured while rigging and de-rigging?

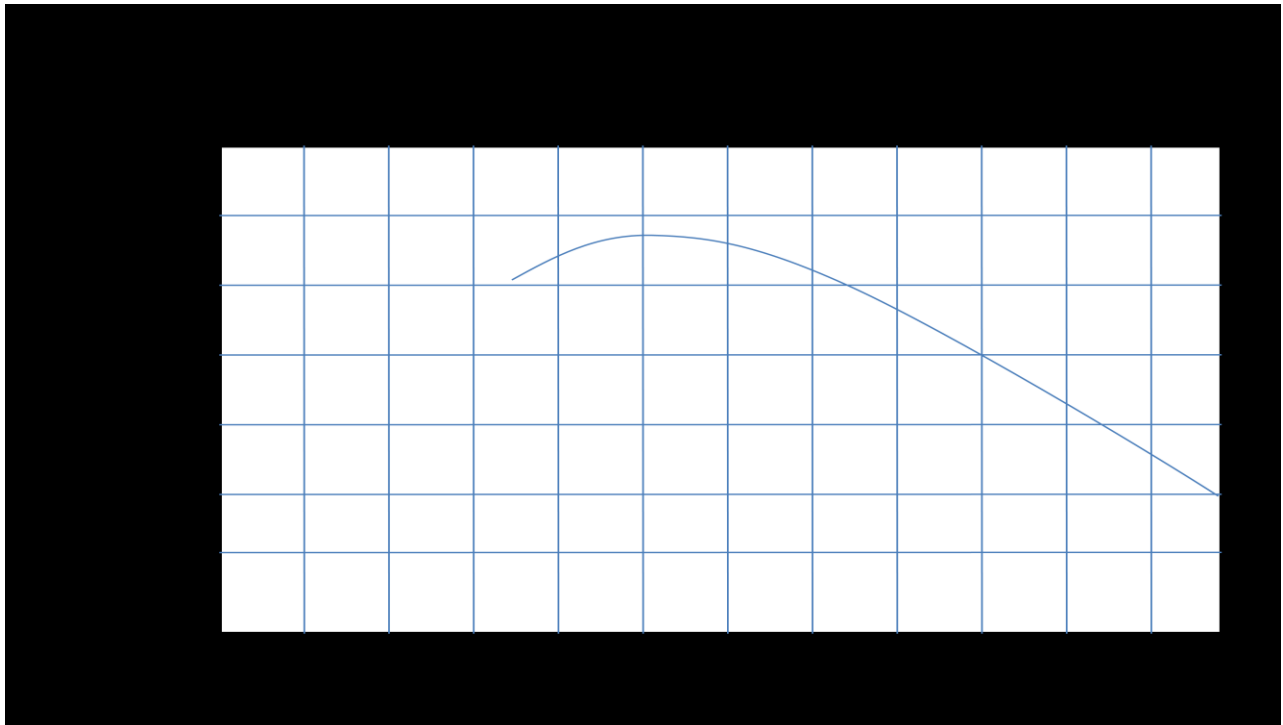
Cross Country (These are general, cross country questions)

- 32. You are 5000 feet high, and sinking at 150fpm. Your groundspeed from the computer reads 50 knots. What is your glide ratio and how far will you go before you reach the ground?

- 33. From the diagram below, indicate the following speeds:
Best L/D:

Minimum Sink:

Best L/D in 20 knot headwind:



Date: _____

ESA authorized Instructor: _____