Name and Completion Date

_____

Alaska Float Ratings Study Questions

Please note: These questions are arranged in roughly the same order as they appear in the Areas of Operations and Task sections in the Private and Commercial Pilot Airman Certification Standards (ACS) manual. They are designed to give you an example of the types of questions you will be asked to demonstrate your grasp of the knowledge, risk management, and skill elements required by the ACS during the oral and flying portion of the practical test.

Instructions for completing these study questions:

You will find the answers in the FAA-H-8083-23 Seaplane Operations Handbook, PA-18 Owner's manual, AFR PA-18 procedures, PA-18 amplified procedures, and the AFR handouts and study materials located on the AFR web site. You should also review the appropriate ACS knowledge, risk management and skills required for each Task. Please write out your answers legibly and completely. It is helpful to list the reference(s) used next to your answer.

Since you'll have these questions and study materials well in advance of your arrival in Moose Pass, it will make your floatplane experience much more enjoyable and less stressful if you do the homework before you arrive. This has been a recurrent debrief item for those who have taken the course over the years. Some of these questions and answers will not make a lot of sense until you are in the airplane performing the maneuvers. That's the fun part!

You must complete and return this question bank prior to your check ride. During the oral portion of your check ride, you will be expected to answer these questions correctly, along with other questions from the appropriate Tasks in the ACS that are required for the addition of a Private or Commercial Pilot seaplane rating. If you spend the time doing the research to complete these study questions, you should have no trouble with the oral portion of the Practical Test.

FAA publications:

1. The FAA-H-8083-23 Seaplane Operations Handbook is the main reference book for this course. It would be very beneficial to purchase this book. You can also download it from the FAA web site:

https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/seaplane_handbook

2. Airman Certification Standards manual

You may read or download the complete Private Pilot Airplane ACS from the FAA web site: https://www.faa.gov/training_testing/testing/acs/media/private_airplane_acs_change_1.pdf

See Appendix A-14 for the Areas of Operations and Tasks required for the addition of an Airplane Single Engine Sea Rating to an existing ASEL Private Pilot Certificate.

You may read or download the complete Commercial Pilot Airplane ACS from the FAA web site: https://www.faa.gov/training_testing/testing/acs/media/commercial_airplane_acs_change_1.pdf

See Appendix A-14 for the Areas of Operations and Tasks required for the addition of an Airplane Single Engine Sea Rating to an existing ASEL Commercial Pilot Certificate.

Study Questions

1. What are some of the effects of adding floats to an aircraft?

2. What is an auxiliary fin? Why do some floatplanes have them?

3. What is Vfe for the float equipped PA18? Why is it different on a wheel equipped PA-18?

4. How much flotation is required of a float to be certified?

5. Describe the engine in the PA18? Will the PA18's engine still run properly if the master switch is accidentally turned off in flight?

6. The propeller dimensions are 82-46. What do these numbers represent?

7. What are the following V speeds for the PA18

   Vx What flap configuration for Vx?
   Vy
   Va
   Vne
   Vfe
   What is best glide speed?

8. How many compartments are in each float on the 2000 float? What is their purpose?

9. How much fuel does the PA18 hold?

10. How many gallons per hour does the PA-18 burn?

11. What is the oil capacity? Minimum?

12. Causes of porpoising and skipping, and the pilot action required to prevent or correct these occurrences.

13. What is the purpose of the step?

14. What are some drawbacks to the step in flight?

15. What is the purpose of the bracing wires? How tight should they be?

16. The external member that runs longitudinally (from the toe to the step) down the center of the float, on the bottom is the _____.

17. What is the purpose of this longitudinal member?

18. The water rudders are mounted to the _____.

19. What effect can lake size have on the conditions of the water surface?

20. What are some ways, from the air, to determine wind direction on a body of water?

21. What scale or table provides descriptions that you would use to determine wind velocity on a lake? What wind speed is ideal for seaplane operations?

22. The upwind side of a lake is the_____. Downwind side of the lake is called the_____.

23. To oscillate about the lateral axis, or rock up and down while planing is called

24. How do you correct for these oscillations?

25. Skipping is caused by what?

26. What items must you analyse and determine before landing at an unfamiliar lake or before any landing on the water?

27. Provide a description and explain the purpose of each of the following:

1. Pump out:
2. Bow:
3. Bulkheads:
4. Bumper:
5. Chine:
6. Sister keelson
7. Deck:
8. Inspection cover:
9. Keel:
10. Skeg:
12. Cleat:
11. Transom
12. Water Rudder:
13. Stern:
14. Front/Aft/Diagonal Struts:

28. How are seaplane bases identified on sectional charts?

29. Where or how would you find out if there are any operating restrictions at various seaplane bases or bodies of water?

30. When two seaplanes or vessels are converging on the water, which one has the right of way?

31. What are two unwritten rules with regards to right of way?

32. What side must the red buoys be on when returning to the harbor?

33. When doing a preflight inspection, how would you determine if there was excessive water in the floats?

34. Is it required that you brief your passengers on the use of seat belts and emergency equipment?

35. What are some considerations when starting the engine of a seaplane?

36. The water rudders are down for _____ and _____ taxi.

37. The water rudders are up for _____ taxi, and when _____&_____.

38. How do you avoid damaging the propeller with water spray?

39. Why should plowing be avoided if not necessary?

40. When slow taxiing across a boat wake, at what angle, and what RPM should you cross at?

41. When do you use a plow turn and why? When would you not use a plow turn?

42. Which direction does the center of buoyancy (COB) move when plow taxiing?

43. When making a plow turn, why is it necessary to turn in the opposite direction about 30 degrees then turn in the desired direction?

44. Which direction does the floatplane turn the best while on the water?

45. Describe the procedure for getting a floatplane on step.

46. When step taxiing, you use elevator to tune for the _____angle.

47. What forces act on a floatplane when making a step turn from downwind to upwind? Is there any significance to these forces? What forces act on a floatplane when making a step turn from upwind to downwind? Is there any significance to these forces?

48. Which direction of turn is there more risk to tipping over?

49. Do you need to make any power changes when starting a step turn?

50. When sailing, power off, you point the _____in the direction you want to go?

51. To move the position of the tail while sailing, the pilot must use either _____or _____or both. When sailing, the water rudders are _____. Why?

52. What are two things that could happen to a seaplane when sailing in high wind?

53. If you are going too fast, while sailing, what could you do about it?

54. If the wind is too strong to make a turn from upwind to downwind, what can you do to reach a point on the shore behind you?

55. When operating on rivers, if there were no other factors, would you want to take off into a current or with the current?

56. What factor will affect or prevent a seaplane from taking off during a downwind take off?

57. How are water rudders commonly damaged on seaplanes?

58. While on the water, during what phase is there the most drag between the float and the water?

59. Describe the four phases of a seaplane takeoff.

60. What will happen if you try and "rotate" early by applying too much back pressure?

61. When flying landplanes you want to takeoff and land in the middle of the runway. When flying seaplanes where do you want to takeoff and land?

62. The aircraft's attitude while on step, accelerating for takeoff, is approximately the same attitude used for _____?

63. It is recommended that all landings be made power off, or power on?

64. When landing, you want the same attitude, or slightly higher, as the attitude used for _____ taxi.

65. You never want to land flat, or on the bows of the floats. What will happen if the pilot were to do this?

66. Upon touchdown, what immediate action items must you do?

67. What are two techniques that can be used to land in a crosswind?

68. What can you do to help the floats break loose from glassy water on takeoff? (2 Ways)

69. When landing on glassy water, at what time do you need to transition into your landing attitude?

70. What flap setting do you use when landing on glassy water?

71. Is there more or less drag when taking off and landing on glassy water versus normal water?

72. When you touch down on glassy water, will the drag have any effect on the pitch attitude of the floatplane? What pitch attitude must you, as the pilot, maintain?

73. What actions must you do immediately when touching down on glassy water?

74. Is it acceptable to make descending turns over glassy water without a visual reference?

75. During a rough water takeoff, at what time do you want to apply takeoff power?

76. What are the elements involved that make the rough water takeoff different from a normal takeoff?

77. When taking off out of a small lake at a high elevation, on a warm day, what are the factors that may influence the seaplane's performance?

78. In the above scenario, why is it important to have a go/no-go point selected prior to initiating your takeoff run?

79. When making a confined area takeoff what can be done to takeoff in a shorter distance?

80. What is the first action you must immediately perform if you have a power plant failure just prior to liftoff? Just after liftoff?

81. List emergency actions for fire in flight. List emergency actions for electrical smoke in cockpit

82. If you landed at a remote lake, far from help, and tore a large hole in one of the float compartments, what could you do?

83. When anchoring a seaplane, what is the rule of thumb for knowing how much anchor line to put out?

84. What is the best way to approach a dock?

85. How would you approach a beach, to windward? to Leeward? What are some of the hazards during beaching? How do you secure the seaplane after you have beached?