

Alaska Float Ratings Oral Study Questions

These study questions have been written to assist and enable you to gain the maximum benefit from your learning experience of —getting your float rating. There is an old saying, —*The more, you put into something, the more you will get out of it*”.

Please note: These questions are arranged in the same order as the Operations and Task sections in the Practical Test Standards (PTS). As study questions, they were designed to give you an example of the type of questions for which you will be asked to demonstrate knowledge at the oral examination and during your check ride. The questions during your exam and check ride will be taken from, but not limited to, the following aspects of float flying.

Instructions for completing these study questions:

Before each set of questions is an excerpt from the PTS. Please read, become familiar, and think about the PTS excerpt before beginning to answer these questions. Read each question. After reading the question, go to the particular reference suggested or other references of your choice, and write in a complete answer. *Do not short change the answer – Think about it.*

These questions and your answers are for your learning benefit. *This is not a test!* These are —study questions. It is more important that you learn from the question than you guess the correct answer. A well-proven, effective learning technique is: First, read the question; next, research the answer, and finally, write out the answer. Studying this way, you will have a greater opportunity to retain the information.

As you read and study the reference material, you will be learning more than just the answer to the question. **Hint:** record your PTS reference next to the answer.

You must complete and return these questions prior to your check ride. During the oral portion of your check ride, you will be expected to not only answer correctly from these questions, but all areas as required by the PTS.

Suggested References

Since I’m sending this material to you weeks or even months before you will fly a seaplane, recognize that until you actually experience the sight, sounds, and feelings of what it

is like to be on the water and flying a float plane, it will not be possible to thoroughly and completely comprehend what you are reading until you're here.

FAA publications:

1. The FAA-H-8083-23 Seaplane Flying Handbook is the book we use. It would be beneficial to purchase this book. You can download it from the internet at: www.faa.gov/library/manuals/aircraft/seaplane_handbook/
2. The Practical Test Standards
You may read or download the complete Private PTS from the FAA web site: http://www.faa.gov/training_testing/testing/airmen/test_standards/pilot/media/FAA-S-8081-14A.pdf
You may read or download the complete Commercial PTS from the FAA web site: http://www.faa.gov/training_testing/testing/airmen/test_standards/pilot/media/FAA-S-8081-12B.pdf
3. Alaska Float Rating (AFR's) Handouts
4. PA-18 Owner's Manual and Airplane Flight Manual
5. Other references are referred to after each Task. Also, look in the Introduction to the Practical Test Standards.

Study Questions

Note: If you are writing the answers prior to starting your training, only answer those questions that can be easily answered from your self-study. You will learn the rest of the answers during your flight training.

Write each answer in the space provided under the question. Suggestions to find the answers are sometimes in parenthesis following the question, i.e. (FAA-H8083-23).

I. AREA OF OPERATION: PREFLIGHT PREPARATION

F. TASK: PERFORMANCE AND LIMITATIONS (ASEL and ASES)

REFERENCES: FAA-H-8083-23; POH/OWNERS MANUAL.

Objective: To determine that the applicant:

1. **Exhibits knowledge** of the elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance and the adverse effects of exceeding limitations.
2. **Computes weight and balance.** Determines the computed weight and center of gravity is within the airplane's operating limitations and if the weight and center of gravity will remain within limits during all phases of flight.
3. **Demonstrates use** of the appropriate performance charts, tables, and data.
4. **Describes the effects** of atmospheric conditions on the airplane's performance.

1. What affects does the addition of floats have on an aircraft? (FAA-H-8083-23)
2. Why are land plane and seaplane C.G. ranges different?
3. What is an auxiliary fin, and why do some floatplanes have them?
4. What is V_{fe} for the float equipped PA18? Is this the same on wheels? Why? (Think!) (Airplane Flight manual)

G. TASK: OPERATION OF SYSTEMS (ASEL and ASES)

REFERENCES: FAA-H-8083-23; POH/OWNERS MANUAL.

Objective: To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the airplane provided for the flight test by explaining at least three (3) of the following systems.

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Water rudders (ASES).
4. Power plant and propeller.
5. Landing gear.
6. Fuel, oil, and hydraulic.
7. Electrical.
8. Avionics
9. Pilot-static vacuum/pressure and associated flight instruments.
10. Environmental.
11. Deicing and anti-icing.

5. Two of our PA-18'S are equipped with 2000 Floats. What does the 2000 indicate on this model float?
6. How much floatation is required of a float in order to be certified?
7. Describe the engine in the PA18? Will the PA18's engine still run properly if the master switch is accidentally turned off in flight? Describe the function of the magnetos. (Owners Manual)
8. The propeller dimensions are 82-46. What do these numbers represent?
9. What is the purpose of the two, two quart header tanks that are installed in the PA18? (Owners manual)
10. What are the following V speeds for the PA18?
Vx What flap configuration?
Vy
Va

Vne

Vfe

Best glide

11. How many compartments are in each float on the 2000 float? Why?
12. How much fuel does the PA18 hold? (OWNERS MANUAL)
13. How many gallons per hour does it burn? (OWNERS MANUAL)
14. What is the oil capacity? Minimum? (OWNERS MANUAL)

H. TASK: WATER AND SEAPLANE CHARACTERISTICS (ASES)

REFERENCE: FAA-H-8083-23.

Objective: To determine that the applicant exhibits knowledge of the elements related to water and seaplane characteristics by explaining:

1. The characteristics of a water surface as affected by features, such as—
 - a. size and location
 - b. protected and unprotected areas
 - c. surface wind
 - d. direction and strength of water current
 - e. floating and partially submerged debris
 - f. sandbars, islands, and shoals
 - g. vessel traffic and wakes
 - h. other features peculiar to the area
 2. Float and hull construction, and their effect on seaplane performance.
 3. Causes of porpoising and skipping, and the pilot action required to prevent or correct these occurrences.
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15. Where is the step located and why? (FAA-H-8083-23)

 16. What are some drawbacks to the step in flight? (FAA-H-8083-23)

17. What is the purpose of the step? (FAA-H-8083-23)
18. What is the purpose of the bracing wires? How tight should they be?

19. The external member that runs longitudinally (from the toe to the step) down the center of the float, on the bottom is the _____. (FAA-H-8083-23)

20. What is the purpose of this longitudinal member? (FAA-H-8083-23)

21. The water rudders are mounted to the _____. (FAA-H-8083-23)

22. What affect can lake size have on the conditions of the water surface? (FAA-H- 8083-23)

23. What are some ways, from the air, to determine wind direction on a body of water? (FAAH-8083-23)

24. 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? (FAA-H-8083-23) **Note. You will be expected to know this scale.**

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

26. To oscillate about the lateral axis, or rock up and down while planing is called (FAA-H8083-23)

27. How do you correct for these oscillations?
28. Skipping is caused by what? (FAA-H-8083-23)
29. How would you correct for skipping?
30. What items must you analyze and determine before landing at an unfamiliar lake or before any landing on the water? (**Learning to fly floats is a course in decision making. This question is very important!**)
31. Provide a description and explain the purpose of each of the following:
(In writing or a drawing – use extra paper if need be.)
1. Pump out:
 2. Bow:
 3. Bulkheads:
 4. Bumper:
 5. Chine:
 6. Sister keelson
 7. Deck:
 8. Inspection cover
 9. Keel: 10. Skeg
 11. Cleat:
 12. Transom
 13. Water Rudder:
 14. Stern:
 15. Front/Aft/Diagonal Struts:

I. TASK: SEAPLANE BASES, MARITIME RULES, AND AIDS TO MARINE NAVIGATION (ASES)

REFERENCES: FAA-H-8083-23; AIM.

Objective: To determine that the applicant exhibits knowledge of the elements related to seaplane bases, maritime rules, and aids to marine navigation by explaining:

1. How to locate and identify seaplane bases on charts or in directories.
2. Operating restrictions at various bases.
3. Right-of-way, steering, and sailing rules pertinent to seaplane operation.
4. Marine navigation aids such as buoys, beacons, lights, and sound signals.

32. How are seaplane bases identified on sectional charts? (FAA-H-8083-23)

33. Where or how would you find out if there are any operating restrictions at various seaplane bases or bodies of water? (FAA-H-8083-23)

34. When two seaplanes or vessels are converging on the water, which one has the right of way? (FAA-H-8083-23)

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

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

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION (ASEL and ASES)

REFERENCES: FAA-H-8083-23; POH/AFM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to preflight inspection. This shall include which items must be inspected, the reasons for checking each item, and how to detect possible defects.

2. Inspects the airplane with reference to an appropriate checklist.
3. Verifies the airplane is in condition for safe flight.

37. When doing a preflight inspection, how would you determine if there was excessive water in the floats? (3 Ways)

B. TASK: COCKPIT MANAGEMENT (ASEL and ASES)

REFERENCES: FAA-H-8083-23; POH/AFM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to cockpit management procedures.
2. Ensures all loose items in the cockpit and cabin are secured.
3. Organizes material and equipment in an efficient manner so they are readily available.
4. Briefs occupants on the use of safety belts, shoulder harnesses, doors, and emergency procedures.

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

C. TASK: ENGINE STARTING (ASES)

REFERENCES: FAA-H-8083-23; POH/AFM

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended engine starting procedures. This shall include the use of an external power source, hand propping safety, and starting under various atmospheric conditions.
2. Positions the airplane properly considering structures, surface conditions, other aircraft, and the safety of nearby persons and property.
3. Utilizes the appropriate checklist for starting procedure.

(This task is simple, but one of the least understood.)

39. What are some considerations when starting the engine of a seaplane? (***Be sure to talk to your instructor about this one*** (FAA-H-8083-23))

TASK: TAXIING AND SAILING (ASES)

REFERENCES: FAA-H-8083-23; USCG NAVIGATION RULES, INTERNATIONAL-INLAND; POH/AFM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to water taxi and sailing procedures.
2. Positions the flight controls properly for the existing wind conditions.
3. Plans and follows the most favorable course while taxi or sailing; considering wind, water current, water conditions and maritime regulations.
4. Uses the appropriate idle, plow, or step taxi technique.
5. Uses flight controls, flaps, doors, water rudder, and power correctly so as to follow the desired course while sailing.
6. Prevents and corrects for porpoising and skipping.
7. Avoids other aircraft, vessels, and hazards.
8. Complies with seaplane base signs, signals, and clearances.

40. The water rudders are down for _____ and _____ taxi. (FAA-H-8083-23)

41. The water rudders are up for _____ taxi, and when
_____ & _____. (FAA-H-8083-23)

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

43. Why should plowing be avoided if not necessary? (3 reasons)

44. If you have a fairly strong, quartering tailwind, what position would the flight controls be in?
(FAA-H-8083-23)

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

46. Why is the stick held all the way back when taxiing on the water?

47. When do you use a plow turn and why? When would you not use a plow turn?
48. Which direction does the center of buoyancy (COB) move when plow taxiing? What affect does this movement have on controlling the floatplane?
49. When taxiing downwind in a strong breeze why might you need to plow taxi?
50. When idle taxiing downwind in a strong breeze, what position does the elevator need to be in? What determines its position?
51. When making a plow turn, why is it necessary to turn in the opposite direction about 30 degrees then turn in the desired direction? What force are you using?
52. Which direction does the floatplane turn the best while on the water? Why?
53. Describe the procedure for getting a floatplane on step.
54. When step taxiing, you use elevator to tune for the _____ _____ angle.
55. What forces act on a floatplane when making a step turn from downwind to upwind? Is there any significance to these forces?

56. What forces act on a floatplane when making a step turn from upwind to downwind? Is there any significance to these forces?
57. Which direction of turn is there more risk to tipping over? Why?
58. Do you need to make any power changes when starting a step turn? Why?
59. When sailing, power off, you point the _____ in the direction you want to go?
60. To move the position of the tail while sailing, the pilot must use either _____ or _____ or both. When sailing, the water rudders are _____. Why?
61. What are two things that could happen to a seaplane when sailing in high wind?
62. If you are going too fast, while sailing, what could you do about it?
63. 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?

Task F. Before Takeoff Check

64. Prior to any takeoff, what are the items on the checklist that must be accomplished? (AFR Handouts)

IV. Takeoffs, Landings, and Go-arounds

REFERENCES: FAA-H-8083-23; POH/AFM.

Objective: To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind takeoff, climb operations and rejected takeoff procedures.
2. Positions the flight controls for the existing wind conditions.
3. Clears the area, taxies onto the takeoff surface and aligns the airplane on the runway center/takeoff path.
4. Retracts the water rudders as appropriate (ASES), and advances the throttle smoothly to takeoff power.
5. Establishes and maintains the most efficient planing/lift off attitude and corrects for porpoising and skipping (ASES).
6. Lifts off at the recommended airspeed, and accelerates to VY.
7. Establishes a pitch attitude that will maintain VY, ± 5 knots.
8. Retracts the landing gear if appropriate, and flaps after a positive rate of climb is established.
9. Maintains takeoff power and VY ± 5 knots to a safe maneuvering altitude.
10. Maintains directional control, proper wind-drift correction throughout the takeoff and climb.
11. Complies with noise abatement procedures.
12. Completes appropriate checklists.

Task A. Normal and Crosswind Takeoff and Climb

65. When operating on rivers, if there were no other factors, would you want to take off into a current or down current? Why?
66. When do you want to retract the flaps after takeoff? (AFR)
67. What factor will affect or prevent a seaplane from taking off during a downwind take off?
68. Why do seaplanes use flaps for takeoff?
69. How are water rudders commonly damaged on seaplanes?

70. While on the water, during what phase is there the most drag between the float and the water?
71. When lifting off, why is it important to maintain the takeoff attitude?
72. Describe the four phases of a seaplane takeoff. (Use proper terminology.)
73. What will happen if you try and "rotate" early by applying too much back pressure? What would the effects be?
74. When taking off, you raise one float out of the water first to aid in acceleration. Do you want to let the plane turn the direction of aileron applied, or apply opposite rudder to keep the takeoff path straight? What is the reasoning behind your answer? (Discuss with instructor)
75. 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? Why?

Task B. Normal and Crosswind Approach and Landing

76. The aircraft's attitude while on step, accelerating for takeoff, is approximately the same attitude used for _____?
77. What can happen if you land with a strong tailwind, or with excessive ground speed?

Why?

78. Does the position of the sun have an impact on the pilot's ability to see obstructions (logs) on the water? Why?
79. Do you want your water rudders up or down for landing?
80. It is recommended that all landings be made power off, or power on?
81. When landing, you want the same attitude, or slightly higher, as the attitude used for _____ taxi.
82. You never want to land flat, or on the bows of the floats. What will happen if the pilot were to do this?
83. Upon touchdown, what immediate action items must you do? ED
84. What are two techniques that can be used to land in a crosswind?
85. Describe the elements of each method of crosswind landing.

Task C. Glassy Water Takeoff and Climb

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

87. When making a glassy water takeoff, you want to be sure to set an attitude that will result in a _____.

Task D. Glassy Water Approach and Landing

88. When landing on glassy water, at what time do you need to transition into your landing attitude? (FAA-H-8083-23)

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

90. Can you see glassy water, even if you try really hard?

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

92. Will this change in the amount of drag affect the seaplane's performance? How?

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

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

95. Is it acceptable practice to make turns over glassy water? What conditions must be met?

96. Is it acceptable practice to make descending turns over glassy water?
97. When landing on glassy water what can you use for reference to determine your altitude?
When do you want to transition into your landing attitude?
98. When you touch down on glassy water you want to close the throttle, but first you must determine that you are indeed on the water. What are three ways to determine you are?

Task E. Rough Water Takeoff and Climb

99. During a rough water takeoff, at what time do you want to apply takeoff power?
100. What are the elements involved that make the rough water takeoff different from a normal takeoff?

Task G. Confined Area Takeoff and Climb

101. 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?
102. In the above scenario, is it important to have a go/no-go point selected prior to initiating your takeoff run?

103. What are the factors involved in selecting such a point?
104. When making a confined area takeoff what can be done to get off the water in a shorter distance?
105. What are the elements involved in making a confined area takeoff?

VIII Slow Flight and Stalls

Task D. Spin Awareness

106. What is the recovery procedure if you accidentally enter a spin? (Owners Handbook)

IX. Emergency Operations

Task B. Emergency Approach and Landing

107. What is the first action you must immediately perform if you have a power plant failure just after liftoff? Just prior to liftoff? (Owners Handbook)
108. List emergency actions for fire in flight. List emergency actions for electrical smoke in cockpit (Owners Handbook)

Task D. Emergency Equipment and Survival Gear

109. 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?

XI. Post flight Procedures

Task B. Anchoring

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

Task C. Docking and Mooring

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

Task D. Beaching

112. 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? (Describe in detail.)

Extra

113. What are the four truths of float flying? (Ask an AFR instructor.)

114. What is the purpose of the shoreline? (This is a fun question)

115. About what time does the sun set in Moose Pass, AK on June 21st? (This is another fun question, think outside the box)

Note: Remember, a lot of the information you need to fully understand and answer these questions will be learned during your float plane training.

These questions are by no means perfect, or the only questions that could be asked about float flying. If, as you are reading and studying these questions, you think of others that you feel would be better, please let me know and they will be added to future study questions.

Have fun learning about float flying, remember, —All learning is self learning. I, as an instructor can only point you in a direction to study.

Vern Kingsford

CFI DPE

—Nothing in the affairs of men is worthy of great anxiety. Plato