**Seaplane Study Quiz**

1. When step taxiing which is the most dangerous turn that can capsize a seaplane? Why?
2. What is the checklist we use before any major operation?
3. What type of water condition is the most dangerous for a seaplane that is landing?
4. What technique do we use for a glassy - water takeoff?
5. What is it called when an aircraft turns into the wind by itself?
6. In which position should the elevator control be in while on the water?
7. When do we use step taxiing?
8. Describe the technique for sailing.
9. Describe the technique for ramping.
10. Describe the technique for beaching.
11. List four reasons a seaplane enters porpoising.
12. What is the best way to determine the wind direction if you are on the water?
13. When flying overhead, how can you determine the wind direction?
14. What method is used to stop severe porpoising?
15. What method is used for glassy water landings?
16. What certificates or documents must be carried in the airplane at all times?
17. What certificates must be carried by the pilot?
18. How long is a second class medical good for?
19. Who has the right of way boats or seaplanes? Why?
20. Frequent white caps occur at what wind speed?
21. Wind streaks start to form at what wind speed?
22. Who has the right of way on water, a seaplane taking off or a seaplane landing?
23. The color of a rotating beacon at a seaplane base is?
24. The symbol on a chart for a seaplane base is? Explain the landing direction
25. What part of the seaplane hull is the most important? Why?
26. What is the most important part of a pre-flight on a seaplane?
27. What precautions should be taken when docking?
28. What causes a seaplane to stall?
29. 14 CFR 91.115 states?
30. Give 5 sources that a pilot can use to determine if the landing area is open
31. What are 5 items a pilot will check for on his fly over?
32. Describe a maximum performance takeoff?
33. How many water- tight compartments does this seaplane have?
34. Why is proper elevator trim important on takeoff?
35. Why should landings be made at or near full stall?
36. Describe crosswind takeoff and landing methods.
37. Which way will the seaplane turn the tightest on water, left or right? Why?
38. What precautions should be taken when water depth is not known?
39. Describe the cause and effect of a water loop?
40. Describe the cause and effect of skipping?
41. The two worst events that can be done in an amphibian are?
42. If you lose a wing float you should do what?
43. If towing is necessary where should you secure the tow line?
44. Where is the best CG for a high density takeoff?
45. Which one has steeper/ rougher waves a shallow lake or a deep lake?

29

**Operating Manual Quiz**

1. Gross weight of the Widgeon is on land? on water?
2. What is the Basic Empty weight?
3. What is the useful load?
4. What is the fuel capacity?
5. What is the normal fuel consumption at cruise?
6. With two engines, what are the service and absolute ceilings?
7. With single engine, what are the service and absolute ceilings?
8. What is the maximum rate of climb?
9. What is the single engine maximum rate of climb at 4700 lbs.?
10. Describe the emergency gear extension procedure.
11. Describe the cross-feed procedure. When do we need it?
12. What is the immediate action on an in -flight engine failure?
13. Under what conditions is V MC determined?
14. What is the go-around procedure?
15. Flaps for normal takeoff on land and water is?
16. What wave height is considered rough water?
17. Which is the critical engine? Why?
18. Which engine has an alternator?
19. Where is the hydraulic pump located?
20. What is the normal hydraulic pressure in psi?
21. What is the hydraulic system capacity? Reservoir ?
22. What type of brakes do we have? Where are the reservoirs? What type fluid?
23. What is the air pressure for the tires?
24. What precaution concerns the door and flaps?
25. Describe the hydraulic system with reference to the gear, how long to cycle, hand pump.
26. Describe the flap system and emergency extension.
27. Describe the electric system.
28. Where are the batteries located?
29. Give the following speeds: V MC, V YSE, V S, V SO, V X, V Y, V FE, V LE, V NO, V A
30. What is the take off distance on land at 4700 pounds, to clear a 50-foot obstacle.
31. When measuring water distance at 90 knots 1 second equals how many feet?
32. What type are the engines?
33. How many drain plug are in the hull? Wing floats?
34. How is the bilge pump operated?
35. What is the recommended oil grade and quantity?
36. What is the maximum flap extension?
37. How many psi is in the hydraulic system accumulator? What is its purpose?
38. Why is there a balance on the right elevator tab? How does it work?
39. Can you feather a prop at any time?
40. What type of carburetor? How susceptible is it to icing?
41. How do we restart an engine in flight?
42. What part of the pre-landing checklist should we say out loud?
43. Too high a speed on the water will cause what? Why?

30

**Seaplane Study Quiz Answers**

1. turning from downwind to upwind, because the wind and centrifugal force work in the same direction to capsize the aircraft.
2. GUMPFTS
3. glassy water
4. taxi around to ripple the water surface makes it easier and faster to lift off.
5. windcock or weathervane
6. aft unless there is a substantial tailwind, ailerons with regard to the wind
7. to cover long distances quickly when the water is relatively calm
8. ailerons in the direction desired to go and opposite rudder.
9. gear down, idle speed to ramp stick aft, power up when wheels touch.
10. wheels down in deeper water, approach beach at an angle tail-wheel unlocked
11. attitude too high or low, power too high or low, hit a wake, or wave action.
12. let the aircraft weathervane
13. smoke or windsock, calm areas on upwind shoreline, wind streaks, waves
14. power off, stick back,. flaps up just before dropping off of the step
15. establish landing attitude and power set before LVR, do not flare
16. airworthy cert., registration, radio license (international flights)
17. pilot’s certificate and medical certificate
18. 12 calendar months
19. boats, FAR 91.115., boat operators don’t need a license pilots do
20. 13 mph, 11 knots
21. 5 knots
22. seaplane taking off
23. white/yellow
24. an anchor, stock of anchor shows the measured landing direction in the directory
25. the step, reduces drag while planing and gives a pivot point for takeoff rotation
26. check the bilge for water, may exceed weight and balance
27. approach slow, have assistants keep the floats and wing from hitting the dock
28. exceeding the critical angle of attack
29. aircraft operating on the water shall keep clear of all vessels. Vessels to the other’s right has the  right of way, approaching head on pass to the right. Vessel being overtaken has the right of way  proceed with regard to limitations of the respective craft.
30. SPA water landing directory, local seaplane base, local police, corps of engineers, state park  authority
31. wind direction, water length, depth, surface condition, obstacles, power lines
32. short field/water technique use 15 degrees flaps get off the water ASAP
33. Five
34. as the seaplane leaves the water the sudden decrease in water drag may cause a severe pitch up  tendency
35. the seaplane was designed to land as slow as possible in a planing attitude
36. you should use the downwind arc method with the wind and waves on your left
37. left, “p” factor
38. use gear down to slow and keep from hitting the hull on any submerged objects
39. landing wing low, catching a float severely yawing the plane one way then the other, usually

31

destroying the aircraft.

1. Similar to skipping a stone, wetting too much of the tail section behind the step causing severe drag  and suction until buoyancy overcomes it and the seaplane skips out of the water too slow and too  high an angle of attack to fly, usually occurs on glassy water or high gross weight takeoffs.
2. Landing in the water gear down or with a low pitch attitude.
3. Takeoff if room and speed permits or put a person positioned on the opposite wing
4. a bridle set-up with a line secured to each prop. Hub
5. forward c.g. in a widgeon
6. a shallow lake has the rougher “choppy” waves.

32

**Operating Manual Quiz Answers**

1. (a) 5400 pounds. (b) 4700 pounds
2. 3816 pounds seats, 3825 divan
3. 884 pounds water, 1584 pounds land- seat config. (9 lbs. less with the divan)
4. 108 gallons
5. 22 gph
6. (a)17000 feet (b) 18,200 feet at 4700 pounds
7. at 4700 pounds (a) 2800 feet (b) 5700 feet
8. 1520 fpm at takeoff power
9. 196 fpm
10. If the gear fails to extent or to retract: position the gear selector and extend the pump handle and  pump until the gear has moved all the way up or down, pressure will rise and hand pumping will be  hard when the gear is all the way up or down.
11. The cross feed should be selected with only one fuel tank selected on. We only need x-feed if we  need to extend the single engine range or balance the plane.
12. Maintain airspeed and control, mixture rich, props forward, throttles forward, flaps up, gear up,  identify, verify, feather, single engine check list.
13. sea level std. day, critical engine wind-milling, max power good engine, flaps set takeoff, gear up,  CG at the most adverse position max 5 degrees bank into good engine, gross weight, 150 pounds  rudder pressure
14. pitch up, full power, flaps to 10 degrees, gear up, as speed increases flaps up
15. 10 degrees
16. When frequent white caps appear aprox. 1 foot depending on fetch length
17. The left engine is critical. “P” factor, torque, spiraling and accelerated slipstream
18. neither, both engines have alternators
19. The hydraulic pump is located under the pilot’s seat
20. 650 to 950 psi
21. (a) 1 gallon.(b) 3/4 gallon
22. (a) Cleveland (b) below the rudder pedals (c) DOT #5 silicon fluid
23. mains are 40 pounds, 25 pounds when expecting to beach. Solid tail wheel
24. Make sure cabin door is closed before operating the flaps.
25. (a) electric hydraulic pump, closed system for flaps and gear. Brake system is separate. (b) at least  4 seconds (c) at least 24 strokes
26. Hydraulic system. lower the selector handle to lower the flaps then neutralize the handle to stop the  flaps. Do not use more than 30 degrees . If the flaps fail, check the pressure, then use the hand  pump to lower the flaps as necessary
27. 12 volt, 51 amp. alternators, 35 amp. hr. Battery
28. located in the right wing outboard of the engine nacelle
29. All speeds MPH, Vmc 78, Vyse 95, Vs 98, Vso 65, VX 81, VY 100, Vfe 104, Vlo/le 165, Vne 202, Va  112
30. (a) 895 feet. (b) 1550 feet standard day
31. 150 feet
32. Continental O-470 240 hp at 2600 rpm
33. 11 in the hull and 3 in each wing float, 17 total
34. leave the switch in auto unless the on position is required
35. 12 quarts of aeroshell 100 W with a minimum of 9 quarts each engine

33

1. 38 degrees
2. (a) 200 pounds (b) to absorb the hydraulic shocks that may occur in the system and to provide  some reservoir of pressurized fluid.
3. The balance tube acts as a stop for the trim tab as well as a balance for flutter
4. The props may not feather below 1000 RPM and will feather automatically with no oil pressure
5. This is a pressure carburetor and is not iced up very easily, but the induction system has an  automatic alternate air source - spring doors
6. normal starting except that the prop controls are brought just out of feather position in order to warm  up the engines slowly and not to overspeed the engine
7. This is a water landing gear up, this is a land landing gear down
8. Tuck under will occur if you touchdown too fast. The hull is drawn down and thrown up, possibly  snapping the seaplane sideways destructively. Water drag increases by the square as the speed across the water increases.