

ASSIGNMENT 5

Textbook Assignment: General Surface Operations, General Diving Operations, Patrol Routine and Submarine Training Devices, chapters 17-21

1. The Officer of the Deck, subject to orders of the commanding officer, is responsible for
 - a. the weapons that have been loaded.
 - b. crewmen that failed to report back aboard.
 - c. the safety of the ship.
 - d. the charted course to be followed once underway.
2. The officer of the deck must conduct himself as representing
 - a. the finest traditions of the U. S. Navy.
 - b. the commanding officer.
 - c. the best interest of the crew.
 - d. the watch section
3. Before leaving port, preparations must be completed to place the submarine in
 - a. an all maintenance completed mode.
 - b. a no radio transmissions mode.
 - c. a conditions were all weapons are unloaded and disarmed.
 - d. a rigged-for-dive condition.
4. The danger of collision exists on a submarine
 - a. is far less than on other types of vessels
 - b. long before that condition exists on surface vessels.
 - c. only after an emergency surface.
 - d. occurs when the officer of the deck is too inexperienced to stand the watch.
5. The lookouts who stand watch with the officer of the deck should be
 - a. selected from junior crewmen who are not qualified to stand senior watch stations
 - b. ready to man weapons in case the submarine comes under attack.
 - c. ready to work on qualifying other watch stations since there is not much to do.
 - d. selected from the best members of the crew with excellent vision and good health.
6. (TRUE/FALSE) All members of bridge watch should be relieved at the same time. Staggering the watch relief only prolongs the disruptions.
 - a. True
 - b. False
7. While underway on the surface, water can enter the vessel and personnel can be washed overboard because submarines
 - a. have a small freeboard.
 - b. are too unstable to be on the surface in rough seas.
 - c. can be swamped by the wake from a larger vessel if they pass too close.
 - d. careless crew members forget to close hatches or hold on when waves break over the deck.
8. Vessels not moored or anchored are “under way” and when moving are “making way.” The officer of the deck should consider that a submarine holds her “way” _____ a surface ship of similar tonnage.
 - a. about the same as
 - b. shorter than
 - c. longer than
 - d. twice as long as
9. When operating on the surface, enough “way” should be kept on the ship to permit
 - a. torpedoes to be launched.
 - b. maneuvering or quick diving.
 - c. sonar ranging of enemy contacts.
 - d. sufficient water flow to keep the engines cool.

10. When landing, the officer of the deck should never bump any part of the ship. Which parts of the ship are especially vulnerable?
- anchor
 - amidships areas
 - rudder
 - bow and stern parts
11. The slower the submarine approaches the dock, the greater will be the effect of the _____.
- current
 - glare of the sun
 - fresh water from a nearby river
 - rising tide
12. Before the officer of the deck orders a backing bell he should see that all is clear and
- notify the commanding officer.
 - chart a new course.
 - guard the stern planes and propeller.
 - single up all lines.
13. (TRUE/FALSE) The officer of the deck should expect those handling the mooring lines to do the thinking while bringing the ship alongside the dock—he is too busy with other things.
- True
 - False
14. The order given to get underway is
- “Start your engines.”
 - “Shut all watertight hatches, load torpedo tubes.”
 - “Complete loading all stores, remove all hoses to pier.”
 - “Station the maneuvering watch.”
15. When handling lines, the phrase “Double up and secure,” means
- run the line around the cleat again in a figure 8.
 - double the lines to the pier as necessary to secure the mooring.
 - double the amount of strain on the line and tie off to a bollard.
 - double the height above the deck the line is being held and tie off to the conning tower.
16. Ordering “Right (Left) full rudder means
- the steersman (helmsman) will turn the rudder to 90° right or left
 - the steersman (helmsman) will turn the rudder far enough to make a 90° turn
 - turning the rudder to a maximum of 35° right or left.
 - turning both the top and bottom of rudder to 45° right or left.
17. “Rudder amidships” means
- return the rudder to center (0°)
 - move the rudder to halfway between the bow and stern
 - turn the rudder so it is with the beam (width) of the ship
 - turn over control of the rudder to the amidships steering station
18. The officer of the deck should NOT acknowledge reports with “All right” because
- it does not give proper respect to the crew member giving the report.
 - it is too close to “All right already” and appears as if he is frustrated.
 - it can be misinterpreted as an order to the wheel (helm)
 - it might cause the watch section to all move to the starboard side of the ship.
19. There are three types of dives for a submarine. They are
- slow dive, fast dive, and extra fast dive.
 - right dive, left dive and center dive.
 - steep dive, shallow dive and flat dive.
 - quick dive, running dive and stationary dive.
20. To make a stationary dive the main ballast tanks are completely flooded and the variable ballast tanks are flooded enough to
- cause enough downward momentum to dive the ship
 - destroy the remaining positive buoyancy.
 - bring the bow of ship below the waterline sucking the rest of the submarine under.
 - increase the forward moment arm to 75% of the aft moment arm.

21. What is the purpose of the “miniature dive planes,” the trailing edges of which range over degree scales?
- They indicate the angle of rise or dive on the bow and stern planes.
 - They indicate the angle at which the submarine is diving or rising.
 - They show the angle the officer of the deck has ordered for the planes.
 - They are used for mechanical testing of the planes hydraulic system when the submarine is in port.
22. How are hydraulically operated planes controlled?
- hand operated gate valves
 - differential pressure regulator
 - foot pedals with mechanical linkages
 - two way valves
23. _____ is mounted at the center of the control panel and is visible to both the planesmen and diving officer.
- A box with red, yellow and green lights indicating the planes control mode
 - A curved glass tube filled with liquid and a bubble (inclinometer)
 - A depth gage reading from 0 to 600 feet
 - An external hull pressure gage reading from 12 to 4000 psi
24. (TRUE/FALSE) The Christmas Tree is the common name of the hull opening indicator light panel
- True
 - False
25. Before an actual dive, one of the last hull openings to be shut is
- torpedo tube outer doors
 - conning tower hatch (access to the bridge)
 - engine room hatch because of excess heat from diesel engines
 - main ballast tank vents
26. Two short blasts on the diving alarm indicate
- the submarine is diving.
 - the submarine is not diving, the second blast indicates an error.
 - the second warning the submarine is diving, the sequence is three blast, then two blast and the actual dive on one blast.
 - the submarine is surfacing, three blasts indicate diving.
27. When diving, the bow plans are placed on _____ and the stern planes are used to control the angle.
- automatic dive control
 - 10° down so the submarine does not go down too fast
 - 0° angle as the angle of the ship determines the dive.
 - FULL DIVE
28. When the ordered depth has been reached after diving, the main ballast tank vents are
- left open to prevent gas bubbles from the ocean floor from collecting in the tanks
 - shut to expedite an emergency surface if required.
 - cycled open and shut to remove any remaining air.
 - locked to prevent unauthorized operation while the ship is submerged.
29. Submerged operations differ from surfaced operations in that
- speed is severely limited because of little or no visibility.
 - the submarine is controlled in both the horizontal and vertical planes.
 - sonar is the only way to determine the position of the submarine.
 - the submarine can fire torpedoes without being detected.

30. In order to increase the rate of depth change beyond what can be achieved with the diving planes
- more water must be added to ballast tanks to make the submarine heavier.
 - speed must be minimized as increased speed causes lift.
 - the officer of the deck must order a backing bell, reversing the direction of travel
 - inclination (longitudinal axis) of the submarine must be increased causing upward or downward thrust, adding to that of the diving planes.
31. The diving planes can change the depth of the submarine with little or no change to longitudinal axis angle because
- the planes are small and have little effect on the overall submarine
 - the forward trim tank is usually empty and its buoyancy usually counteracts the forces caused by the diving planes.
 - the rotational moment is counteracted by longer afterbody of the submarine.
 - They are so close to the center of the ship there is little moment arm fore or aft.
32. Normally, the depth of the ship is controlled by the bow planes while the angle of the ship is controlled by
- pumping ballast between the trim tanks.
 - having off-watch crew members run forward or aft.
 - ordering all head full with a hard right rudder.
 - the stern planes.
33. The conning officer might give control of speed to the diving officer while
- conducting torpedo evasion.
 - coming to specified depth and making final trim.
 - maintaining periscope depth.
 - shifting propulsion modes and engine testing.
34. The order "Pump from after trim to sea," would be given when the submarine is
- heavy aft and has an up angle but maintaining depth at slow speed.
 - heavy forward and cannot maintain depth at slow speed.
 - heavy aft and heavy over-all and cannot maintain depth at slow speed.
 - light over-all but heavy aft and cannot maintain depth at slow speed.
35. If the submarine is neither heavy aft or heavy forward but it is still necessary to carry an up-angle to maintain depth, the remedy would be to
- pump from the aft to forward trim to hold the bow down.
 - pump from the auxiliary tank to sea to decrease negative buoyancy.
 - pump from sea to aft trim so an up angle can be maintained without the planes.
 - pump from the auxiliary tank to both forward and after trim.
36. The initial trim operation is complete when
- the diving officer returns speed control to the conning officer.
 - no more pumping is done until the next surfacing.
 - depth can be maintained at slow speed with a zero bubble.
 - depth can be maintained at 2/3 speed with a 10° down bubble.
37. In an emergency situation, the steps, in order, for checking downward motion are
- "stop, back and blow."
 - "pump, back and stop."
 - "blow, pump and stop."
 - "stop, blow and pump."
38. The first step in surfacing the submarine is
- pump ballast from trim tanks to sea.
 - wake up the commanding officer and get his permission.
 - order the diving officer to surface the ship.
 - come to periscope depth.

39. When surfacing the ship the up-angle is limited to 5° by
- pumping ballast to or from the aft trim tank.
 - placing a down angle on the diving planes.
 - using the stern planes.
 - blowing the safety tank.
40. To complete blowing the main ballast tanks, _____ are used.
- the medium air pressure tanks
 - excess air in the emergency tanks
 - ballast tanks pumps
 - low pressure blowers
41. (TRUE/FALSE) The order “Abandon the bridge,” is use to get all personnel, unless excepted, to lay below before diving.
- True
 - False
42. The term “Green board” means
- the engine room is ready to dive.
 - all torpedoes are ready to fire.
 - all hull openings are closed.
 - all trim pumps are functional.
43. The diving officer would give the report “low-pressure blower secured” when
- rig-for-dive is complete.
 - rig-for-surface is complete.
 - low pressure tanks are full.
 - main ballast tanks are dry.
44. (TRUE/FALSE) In a submarine, when the center of gravity is in a vertical line with the center of buoyancy, the conditions of stable equilibrium are met.
- True
 - False
45. The amount of water in each variable ballast tank is recorded in the diving book
- when the diving officer achieves final trim.
 - constantly as conditions are always changing.
- whenever levels change in the main ballast tanks.
 - when the diving officer ends his watch.
46. Moment arms are calculated from the auxiliary tank because
- the auxiliary tank is the largest tank on the submarine.
 - it is assumed to be the center of gravity.
 - it is the longest tank on the submarine.
 - the auxiliary tank is heavy because it is subject to sea pressure.
47. The moment arm for sanitary tank No. 1 is calculated with a distance of _____ feet and its location is _____
- 22.5, aft
 - 37.60, forward
 - 77.50, forward
 - 113.5, forward
48. The moment arm for the aft trim tank is calculated with a distance of _____ feet and its location is _____
- 140.00, aft
 - 85.5, aft
 - 112.00, aft
 - 100, aft.
49. Two torpedoes weighing 6354 pounds are removed from a submarine. To compensate for the weight loss, 5290 pounds are flooded into the forward trim tank to maintain the same moment arm. This still leaves the submarine 1064 pounds light. 1064 pounds can be flooded into the _____ tank to maintain the correct over-all fore and aft trim.
- negative
 - auxiliary
 - WRT tank
 - aft trim tank

- c. percentage (0-100), feet
 - d. thousand pound-feet, percentage (0-100)
50. As fuel is used it is replaced with sea water in the fuel tanks. When refueling the sea water is pumped out and fuel oil is added. Sea water weighs 8.56 pounds per gallon while fuel oil weighs 7.13 pounds per gallon. When refueling
- a. 1.43 pounds per gallon in compensation must be added.
 - b. 1.43 pounds per gallon in compensation must be subtracted.
 - c. 1.27 to 1.65 per gallon must be subtracted dependant of the temperature of the fuel oil.
 - d. 1.43 pounds per gallon times .05 pounds per foot of depth in the tank as the fuel oil compresses.
51. (TRUE/FALSE) While calculating moment arms is important, in practice, ballast is pumped or flooded to the nearest tank where the gages can be read.
- a. True
 - b. False
52. A second means of calculating trim is the compensation curve. The curve is laid out with _____ along the center ordinate and _____ along the abscissas.
- a. feet, pounds
 - b. gallons, thousand-feet
 - c. foot-pounds, gpm
 - d. pounds, thousand-pound feet
53. The compensation curve is laid out with the ship's _____ to the right and any weight added that depresses the bow or raises the stern is a _____ number.
- a. conning tower, negative
 - b. bow, positive
 - c. stern, neutral
 - d. bow, negative
54. A third means of calculating trim is compensation by percentage. The curve is laid out with ordinate laid off in _____ and the abscissas laid off in _____.
- a. feet, pounds per gallon
 - b. feet-pounds, gallons
55. Regardless of the method used, great care should be taken when figuring compensation. A 100 pound error in the forward trim tank is the same as a 1040-pound error in ammunition and refrigeration space because
- a. ammunition and perishable food stores weigh more than sea water.
 - b. the forward trim tank has approximately ten times the moment arm as the ammunition and refrigeration space.
 - c. compensation for the forward trim tank can only be done by moment while the ammunition and refrigeration space compensation can be done by the curve or percentage method.
 - d. the forward trim tank produces a clockwise or positive moment while the ammunition and refrigeration space produces a counterclockwise or negative moment.
56. The surface officer of the deck might test the oncoming lookout's vision by asking how many fingers he is holding up because
- a. he is concerned the lookout just came of liberty.
 - b. he wants to see if the lookout needs to wear corrective lenses.
 - c. he is concerned the lookout's vision is not dark-adapted.
 - d. he is concerned the lookout is color blind.
57. The officer of the deck should obtain the commanding officer's permission before
- a. changing speed or course.
 - b. securing the lookout watch and having them lay below.
 - c. putting any piece of machinery or armament out of commission.
 - d. raising the periscope in hostile territory.
58. If a junior office of the deck is stationed, the officer of the deck should
- a. use him as an extra lookout or sound powered phone talker.

- b. use him to supervise the lookouts to insure they are covering their sectors.
 - c. use him to chart all changes in course.
 - d. have him standby below unless needed on the bridge.
59. The junior officer of the deck can act as _____.
- a. quartermaster watch
 - b. diving officer submerged
 - c. engineering officer of the watch
 - d. assistant commanding officer
60. Whose primary duty is it to operate the periscope, read and record bearing while submerged and change flares at the proper time?
- a. steersman
 - b. diving officer
 - c. quartermaster
 - d. messenger of the watch
61. When the order is given to dive the ship, who initiates the diving procedure?
- a. chief of the watch (CPO of the watch)
 - b. quartermaster
 - c. junior officer of the watch
 - d. lookouts
62. The chief of the watch is responsible for pumping all bilges to sea, blow all sanitary tanks and
- a. operate the maneuvering room annunciators.
 - b. man the TDC (torpedo data computer) and assist the OOD
 - c. Obtain warmer clothing or rainclothing for lookouts.
 - d. carry out evening compensation as directed by the diving officer.
63. When making a report on a contact, lookouts should use _____ bearings and the _____ range.
- a. magnetic north, an approximation of
 - b. actual, radar verified
 - c. relative, best estimate of
 - d. +/- 10°, actual
64. During the diving procedure, the helmsman puts the rudder _____ unless otherwise ordered.
- a. 10° right
 - b. 10° left
 - c. amidships
 - d. at enough angle to maintain course
65. If the submerged OOD will become the surfaced OOD, who relieves him while he dresses for surface operations?
- a. commanding officer
 - b. diving officer
 - c. quartermaster
 - d. navigator
66. Control of a submerged submarine is more complicated because it must be navigated
- a. at slower speeds.
 - b. access to the bridge is limited.
 - c. in a three-dimensional medium.
 - d. must remain at battle stations – torpedo.
67. To simulate actual situations encountered on patrol
- a. extensive classroom lectures must be conducted.
 - b. training devices have been developed.
 - c. dockside exercises are conducted.
 - d. training manuals must be studied.
68. The fire-control party trains in the
- a. attack teacher
 - b. torpedo tube trainer
 - c. diving trainer
 - d. conning tower trainer
69. For training purposes, _____ in the field of the periscope to simulate operations against an enemy.
- a. silhouettes of ships are projected
 - b. miniature models or maneuvered
 - c. the approach officer acts as if there are ships
 - d. actual U.S. ships altered to look like enemy ships are positioned
70. The diving trainer is _____ to assume the actual operations of a submarine.
- a. rigged with sound recordings
 - b. filled with water
 - c. raised and lowered
 - d. tilted
71. The diving trainer instructor can create conditions normally encountered underway and registered on the instruments using
- a. voice commands.

- b. placards with written values.
 - c. mechanical jacks.
 - d. electrical and hydraulic controls.
72. (TRUE/FALSE) Actual torpedoes can be fired in the torpedo tube trainer.
- a. True
 - b. False
73. In the torpedo tube trainer, the torpedo tube is
- a. a one-fifth scale of the fleet type submarine torpedo tube.
 - b. the first 10 feet of fleet type submarine torpedo tube.
 - c. only the muzzle hatch
 - d. exact duplicate of the fleet type submarine torpedo tube.
74. (TRUE/FALSE) If a torpedo could be fired in the trainer, it would be necessary to fire at slow speed to prevent damage to the trainer.
- a. True
 - b. False
75. Observations in the torpedo trainer tank are made
- a. from a platform above the trainer
 - b. through heavy glass windows.
 - c. via closed circuit television
 - d. from high speed film developed after the training session is complete.