

# ASSIGNMENT 1

Textbook Assignment: Development of the Submarine, Definitions and Phraseology, Compartmentation and Exterior Installations, and Tank Arrangements, chapters 1-4

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1. The first successful submarine achieved depths of
  1. 12 to 15 feet.
  2. 100 to 200 feet.
  3. 500 to 1000 feet.
  4. 1500 to 2000 feet.
2. Van Drebel's submarine
  1. was highly successful and was used in several naval battles.
  2. sunk on her maiden voyage.
  3. failed to arouse the interest of the navy.
  4. had limited battery life and had to be towed back to port.
3. The first approach to the modern ballast tank was to
  1. fill or empty wooden kegs with sand.
  2. lower or hoist large stones connected with ropes.
  3. fill goat skins with water and use a twisting rod to empty them.
  4. force air into metal cans with a blacksmith's bellows.
4. The result of the attack of the Revolutionary "submarine" Turtle on the HMS Eagle was:
  1. sinking after the charge secured to her exploded.
  2. nothing when the Turtle's operator drowned.
  3. extensive repairs after the charge destroyed her rudder.
  4. Eagle shifted berths farther out to sea after the charge exploded.
5. The sail of the 1800's version of the Nautilus was
  1. made of cloth and propelled the submarine while on the surface.
  2. made of wood and caught fire after a boiler explosion.
  3. farther aft than today's submarine as the helmsman moved the rudder by hand.
  4. innovative as it had the first set of fairwater planes.
6. (TRUE/FALSE) Submarines were used during the Civil War and were successful in sinking enemy vessels.
  1. True
  2. False
7. (TRUE/FALSE) As early as the 1880's steam operated submarines existed.
  1. True
  2. False
8. The first electric submarine had a range of
  1. 5000 miles.
  2. 1000 miles.
  3. 550 miles.
  4. 80 miles.
9. The United States Government took delivery of J. P. Holland's \_\_\_\_\_ submarine.
  1. first
  2. fifth
  3. ninth
  4. twenty first
10. Simon Lake's submarine was unique in that it
  1. was made of wood and floated, unable to submerge.
  2. used a chain drive to rotate the propeller.
  3. had wheels and could roll along the bottom of a lake or river.
  4. had active sonar, caused by striking a large metal plate with a sledge hammer.

11. Before World War I, two power plants were available for submarines that used either
  1. gasoline or Diesel.
  2. alcohol or coal oil.
  3. turpentine or gasoline.
  4. low sulfur coal or wood.
  
12. The fleet type submarine has dimensions of
  1. 48 foot beam and 500 feet long.
  2. 36 foot beam and 400 feet long
  3. 24 foot beam and 400 feet long
  4. 16 foot beam and 300 feet long
  
13. In fleet type submarines, the inner hull extends from
  1. the forward trim tank to the after trim tank.
  2. the forward torpedo room to the after torpedo room.
  3. the safety tank to the fuel oil expansion tank.
  4. the conning tower and amidships scuttle valve.
  
14. The one common member to which the pressure vessels are attached is the
  1. superstructure.
  2. watertight bulkheads.
  3. keel.
  4. conning tower.
  
15. In a double hull designed submarine, the inner hull contained the crew, equipment and weapons systems. Between the inner and outer hull \_\_\_\_\_ and \_\_\_\_\_ were stored.
  1. food stores, spare parts
  2. torpedoes, 3 inch gun shells
  3. hydraulic fluids, lubrication oils
  4. battery cells, signal flares
  
16. In the superstructure are lockers where
  1. items too large to be stored below can be placed.
  2. only items that cannot be damaged by seawater can be placed
  3. ammunition for the 5 inch deck gun can be stored.
  4. refueling hoses are stored for foreign port calls.
  
17. In modern submarines the periscopes are operated from the control room. On fleet type submarines they are operated from the
  1. periscope bay.
  2. captain's ready room.
  3. conning tower.
  4. attack center.
  
18. (TRUE/FALSE) Compartments are only tested to a pressure of 15 psi.
  1. True
  2. False
  
19. \_\_\_\_\_ main diesel engines are used for propulsion on fleet type submarines producing \_\_\_\_\_ hp.
  1. 2, 3200
  2. 4, 1600
  3. 6, 1000
  4. 8, 800
  
20. \_\_\_\_\_ main electric motors produce about \_\_\_\_\_ hp each.
  1. 8, 650
  2. 6, 925
  3. 4, 1375
  4. 2, 2682
  
21. The fleet type diesel submarine had a cruise range of
  1. 48,000 miles.
  2. 1,200 miles.
  3. 25,000 miles.
  4. 12,000 miles.
  
22. The forward torpedo tube blow and vent manifold is located
  1. below the deck plates in the forward torpedo room.
  2. outboard the auxiliary trim tank.
  3. below tubes 5 and 6.
  4. above tubes 1 and 2.
  
23. (TRUE/FALSE) A Browning 45-caliber machine guns was carried aboard the fleet type submarine
  1. True
  2. False

24. (TRUE/FALSE) Main ballast tanks are constructed to withstand full sea pressure
1. True
  2. False
25. The negative tank is used to
1. place a negative pressure in the submarine to seal all hatches.
  2. empty torpedo tubes of water after firing, speeding the reload process.
  3. drain main sea water cooling after securing diesel engine propulsion.
  4. provide negative buoyancy for submerging.
26. Before an actual dive, one of the last hull openings to be shut is the
1. torpedo tube outer doors.
  2. conning tower hatch (access to the bridge).
  3. engine room hatch because of excess heat from diesel engines.
  4. main ballast tank vents.
27. Two short blasts on the diving alarm indicate
1. the submarine is diving.
  2. the submarine is not diving, the second blast indicates an error.
  3. the second warning the submarine is diving, the sequence is three blast, then two blast and the actual dive on one blast.
  4. the submarine is surfacing, three blasts indicate diving.
28. When diving, the bow plans are placed on \_\_\_\_\_ and the stern planes are used to control the angle.
1. automatic dive control
  2. 10° down so the submarine does not go down too fast
  3. 0° angle as the angle of the ship determines the dive
  4. FULL DIVE
29. When the ordered depth has been reached after diving, the main ballast tank vents are
1. left open to prevent gas bubbles from the ocean floor from collecting in the tanks.
  2. shut to expedite an emergency surface if required.
  3. cycled open and shut to remove any remaining air.
  4. locked to prevent unauthorized operation while the ship is submerged.
30. Two zeros would be spoken as, “double-oh” when referring to
1. depth such as “Fi-yiv double-oh feet.”
  2. range such as “Fi-yiv fi-yiv double-oh yards.”
  3. rising the periscope such as, “raise scope double-oh wun thuh-ree feet.”
  4. ship hull numbers such as USS Marshall F-double-oh too.”
31. The term, “belay that” means
1. information is incorrect or has changed.
  2. standby to secure the line.
  3. information is slightly delayed but coming shortly.
  4. request was not understood and should be repeated.
32. (TRUE/FALSE) An emergency message should be preceded by, “Red alert, quiet all stations.”
1. True
  2. False
33. The abbreviation “MBT” means
1. motion before time.
  2. main bearing temperature.
  3. main ballast tank.
  4. move boat through.
34. The abbreviation “shp” means
1. ship’s horse power.
  2. same hyperbolic point.
  3. steam high pressure.
  4. shaft horse power.

35. Modern USN submarines have 3 or 4 watertight compartments. The fleet type submarine had \_\_\_ compartment(s).
1. 5
  2. 7
  3. 9
  4. only 1
36. In the forward torpedo room of the fleet type submarine there are six torpedo tubes. Other equipment includes
1. periscope and rudder control.
  2. sonar gear and underwater log.
  3. anchor windlass and battery.
  4. low frequency antenna and dirty lub oil tank.
37. (TRUE/FALSE) The Forward Battery Compartment also has officer quarters, chief petty officer's quarters and the yeoman's office.
1. True
  2. False
38. IC stands for Internal Communications. The IC switchboard is located in the
1. Forward Torpedo Room.
  2. Forward Battery Room.
  3. Conning Tower.
  4. Control Room.
39. The periscope wells are in the control room. The periscopes are actually used from the
1. torpedo room.
  2. forward control room.
  3. aft battery compartment upper level.
  4. conning tower.
40. (TRUE/FALSE) The bow and stern planes' diving station is located on the starboard side of the control room.
1. True
  2. False
41. The radio room houses the transmitting and receiving apparatus and
1. radar equipment.
  2. radio direction finder.
  3. amplitude conversion transformer.
  4. key-47 decoder.
42. The conning tower has two watertight hatches. One hatch connects to the \_\_\_\_\_ while the other connects to \_\_\_\_\_.
1. control room, bridge
  2. bridge, aft battery compartment
  3. torpedo room, bridge
  4. control room, upper conning tower
43. Perishable food stores would be located in the \_\_\_\_\_ compartment in the cool and refrigeration rooms.
1. control room
  2. forward torpedo room
  3. forward ballast room
  4. after battery compartment
44. Crews berthing in the after battery compartment usually has \_\_\_ bunks, lockers, a head and lavatories.
1. 12
  2. 24
  3. 36
  4. 48
45. Directly aft and below decks of main engine No. 1 and No. 2 are
1. steam generators 1 & 2.
  2. reduction gears port and starboard.
  3. main generators 1 & 2.
  4. lubrication sumps 1 & 2.
46. The auxiliary generator and auxiliary diesel engine are located in
1. after engine room.
  2. forward engine room.
  3. after battery compartment.
  4. after torpedo room.
47. What is the lower part of the maneuvering called?
1. lower maneuvering.
  2. auxiliary engine room.
  3. pump room.
  4. motor room.
48. Between the main motors and propellers are
1. transmission casings.
  2. engine clutches.
  3. lubricating oil pumps.
  4. reduction gears.

49. Unlike the forward torpedo room, the after torpedo room has
1. larger torpedo tubes.
  2. double the crews berthing.
  3. two fewer torpedo tubes.
  4. emergency propulsion motor.
50. How much of the submarine is submerged when it is underway on the surface?
1. 1/4
  2. 1/3
  3. 1/2
  4. 2/3
51. The freeboard of the superstructure is \_\_\_\_ at the bow and \_\_\_\_ at the stern while the submarine is on the surface.
1. 12 feet, 4 feet
  2. 4 feet, 12 feet
  3. 6 feet, 6 feet
  4. 8 feet, 6 feet
52. When the submarine submerges, water enters the superstructure by mean of
1. flood gates.
  2. scuttle cocks.
  3. perforations.
  4. limber holes.
53. On the after part of the bridge is the ship's pelorus that is used to
1. determine depth of water below the keel.
  2. range to enemy targets.
  3. true bearings to targets and landmarks.
  4. actual course over ground.
54. Aft of the conning tower are three access hatches. They are the after torpedo room hatch, after engine room hatch and the \_\_\_\_\_ .
1. forward engine room hatch
  2. mess room access hatch
  3. after battery compartment hatch
  4. auxiliary room access hatch
55. The ballast tanks are divided into four groups, they are
1. forward, aft, port and starboard.
  2. primary, secondary auxiliary and emergency.
  3. torpedo fore & aft, battery fore & aft, auxiliary , engine rooms fore & aft.
  4. main, variable, special and fuel oil ballast tanks.
56. NFOT No. 1 is between
1. MBT No. 1 and MBT No. 2
  2. bow buoyancy tank and fresh water tank No. 1
  3. CFOT No. 1 and CFOT No. 2
  4. MBT No. 2C and MBT No. 2D
57. There are \_\_\_ fresh water tanks with a total capacity of \_\_\_\_\_ gallons.
1. 6, 1875
  2. 3, 2280
  3. 8, 5524
  4. 4, 3920
58. Sanitary Tanks No. 1 and No. 2 are subject to W.S & T to test depth because
1. the tanks could be ruptured in a depth charge attack.
  2. the tanks are always open to sea pressure.
  3. tanks are flushed with sea water.
  4. pumping of tanks near surface could cause submarine to be detected, pumping deep lessens detection.
59. (TRUE/FALSE) Putting the submarine in a state of neutral buoyancy can be achieved with careful calculations. Once achieved other means to keep the submarine at depth are un-necessary.
1. True
  2. False
60. Ballast must be balanced fore-and-aft and athwartship. This is achieved by pumping water with the
1. ballast pumping system.
  2. main engine pumps.
  3. trim system.
  4. special ballast system.

61. The main ballast tanks are used to achieve neutral buoyancy when the submarine is submerged. The negative tank is used to
1. achieve negative buoyancy when a quick dive is desired.
  2. remove ballast from the MBTs for a quick surfacing.
  3. add ballast after firing torpedos to make up for the lost weight.
  4. make up for ballast lost as fuel is used for the engines.
62. Review figure 4-1. A major difference between the MBTs and the NFOTs is
1. MBTs values have hydraulic operators.
  2. NFOTs have vent valves.
  3. MBTs have more piping than NFOTs.
  4. NFOTs have flood valves, MBTs do not.
63. Located directly below the conning tower is
1. fuel ballast tank No. 1.
  2. fuel ballast tank No. 2.
  3. Auxiliary tank.
  4. main ballast tank No. 2.
64. The 10-pound blow manifold can be used to empty the MBTs when
1. the MBTs are less than half full.
  2. on the surface.
  3. the 600-pound air system is empty.
  4. the MBTs have negative buoyancy.
65. (TRUE/FALSE) Variable ballast tanks have special flood valves so they can be filled directly from sea.
1. True
  2. False
66. The \_\_\_\_\_ is used to blow and vent the variable ballast tanks.
1. 10-pound service air system
  2. 18-pound service air system
  3. 150-pound service air system
  4. 225-pound service air system
67. The safety tank is located between
1. MBT No. 1 and FBT No. 2.
  2. MBT No. 2 and NLOT No. 4.
  3. Fresh water tank No. 3 and No. 4.
  4. FBT No. 3A and 3B.
68. The safety tank is blown with the
1. 3000-pound air system.
  2. 600-pound air system.
  3. 225-pound air system.
  4. 10-pound air system.
69. (TRUE/FALSE) The negative tank can be blown with high pressure air, 225-pound air, 10-pound air and pumped with the trim system.
1. True
  2. False
70. The bow buoyancy tank is used to
1. facilitate a quick dive by flooding.
  2. create an up angle during surfacing.
  3. fine tune final trim.
  4. eliminate negative buoyancy.
71. If the fuel in FBT 4A and 4B was completely used and the tanks were empty
1. the submarine would operate normally until return to port and refueling.
  2. other ballast tanks would need to be flooded with water.
  3. torpedos could not be fired without making the submarine positively buoyant.
  4. the submarine could not submerge until compensating water filled FBT 4A and 4B.
72. (TRUE/FALSE) When the FBT are used for fuel storage they are blown with 600-pound air.
1. True
  2. False
73. The FBT (Fuel Ballast Tanks) can be flooded from sea. The NFOT can only be flooded from the compensating water system but
1. the NFOTs must be equalized with sea pressure just as the FBTs are.
  2. the NFOTs like the CFOTs are internal and do not have to be equalized with sea pressure.
  3. the NFOTs have gate type flood valves instead of swing type like the FBTs.
  4. there are no emergency vent valves on the NFOTs.

74. The lubricating oil tanks are filled by
1. 5 gallon containers of oil brought below decks.
  2. fill piping connections in the conning tower.
  3. valves in the pressure hull directly connected to each lubricating oil tank
  4. fill connections on the superstructure deck.
75. Looking at Figure A-8, the sources of fresh water for the submarine are
1. distilling units No. 1 and No. 2.
  2. torpedo firing valve connections.
  3. distilling units and fresh water connection (to shore).
  4. fresh water filling connection, battery fresh water filling connection and distilling units No. 1 and No. 2.