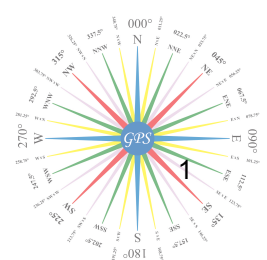
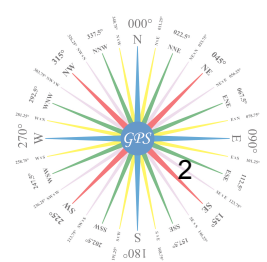


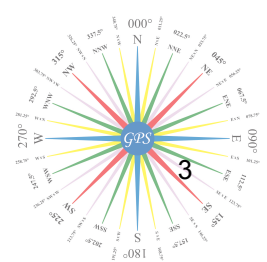
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|--|------|--------------------------------|---|
| 1. | 141 | Ref: Engine, Accumulator | A |
| A hydraulic accumulator is designed to _____. | | | |
| A. store fluid under pressure | | C. provide overpressure relief | |
| B. act as a fluid reservoir | | D. replenish fluid to a system | |
| 2. | 914 | Ref: Engine, Air | C |
| Diesel engines obtain combustion air through turbo chargers, blowers, or _____. | | | |
| A. air starters | | C. natural aspiration | |
| B. carburetors | | D. air receivers | |
| 3. | 3640 | Ref: Engine, Air | D |
| What is the function of an air receiver in the compressed air system? | | | |
| A. Condenses moisture | | C. Purifies the air | |
| B. Provides overpressure protection | | D. Acts as an accumulator | |
| 4. | 3708 | Ref: Engine, Air | C |
| What is the most probable cause of reduced capacity in a reciprocating air compressor? | | | |
| A. Carbon on cylinder heads | | C. Leaking air valves | |
| B. Faulty unloader | | D. Plugged air cooler | |
| 5. | 1453 | Ref: Engine, Battery | C |
| In battery charging rooms, exhaust ventilation should be provided _____. | | | |
| A. at the lowest point | | | |
| B. near the batteries | | | |
| C. at the highest point | | | |
| D. only when charging is in progress | | | |
| 6. | 2076 | Ref: Engine, Battery | C |
| Spaces containing batteries require good ventilation because _____. | | | |
| A. ventilation avoids CO2 buildup | | | |
| B. ventilation supplies extra oxygen for the battery | | | |
| C. ventilation avoids flammable gas accumulation | | | |
| D. less water would be used | | | |
| 7. | 2077 | Ref: Engine, Battery | C |
| Spaces containing batteries require good ventilation because _____. | | | |
| A. ventilation avoids CO2 build up | | | |
| B. ventilation supplies extra oxygen for charging the battery | | | |
| C. ventilation avoids flammable gas accumulation | | | |
| D. less electrolyte is required to maintain the batteries' charge | | | |
| 8. | 2100 | Ref: Engine, Battery | B |
| Storage batteries should be charged in a well ventilated area because _____. | | | |
| A. they generate heat | | | |
| B. they emit hydrogen | | | |
| C. of the toxic fumes they emit | | | |
| D. they recharge faster in a well ventilated space | | | |
| 9. | 2134 | Ref: Engine, Battery | C |
| The accumulation of dangerous fumes generated by the storage batteries is best prevented by _____. | | | |
| A. covering the batteries in a nonconducting, solid enclosure | | | |
| B. mounting the batteries in a position as high as in a position as high as possible | | | |
| C. natural or mechanical ventilation | | | |
| D. securing the batteries to vibration reducing mounting brackets | | | |



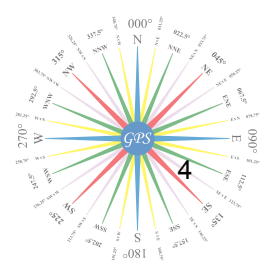
10. 2904 Ref: Engine, Battery D
The primary reason for placing covers over storage batteries is to _____.
A. prevent the accumulation of explosive gases
B. protect the hull from leaking electrolyte
C. prevent movement of the battery in rough waters
D. protect against accidental shorting across terminals
11. 1435 Ref: Engine, Boiler C
In a water tube marine boiler, what protects the superheater tubes from the fires of combustion?
A. Water-wall tubes C. Screen tubes
B. Downcomers D. Water drums
12. 1436 Ref: Engine, Boiler B
In a water-tube marine type boiler, after the steam leaves the generating tubes, in what part of the boiler is temperature of the steam increased?
A. Mud drum C. Economizer
B. Superheater D. Firebox
13. 2178 Ref: Engine, Boiler A
The brickwork surrounding the firebox of a boiler is known as _____.
A. refractory C. the water wall
B. the screen wall D. fire plate
14. 3522 Ref: Engine, Boiler B
What does blowing tubes accomplish?
A. Eliminates unburned fuel oil residues from the firebox
B. Increases boiler efficiency
C. Flushes away mineral deposits inside the water tubes
D. Cleans soot deposits from the inside of the stack
15. 3558 Ref: Engine, Boiler D
What is an advantage of a steam turbine over a diesel for the main propulsion?
A. Faster response from ahead to astern C. Cheaper initial installation cost
B. Less fuel consumption D. Less weight per unit of horsepower
16. 3578 Ref: Engine, Boiler D
What is NOT a function of the steam drum of a marine water-tube boiler?
A. Receives saturated steam from the generating tubes
B. Serves as a reservoir of boiler feed water
C. Holds internal fittings for separation of moisture from steam
D. Collects steam exhausted from the turbines
17. 31 Ref: Engine, Carburetor B
A carburetor is required to have a safety device called a(n) _____.
A. pressure release C. automatic shut off
B. backfire flame arrestor D. flow valve
18. 781 Ref: Engine, Carburetor C
Backfire flame arrestors are installed on _____.
A. fuel tanks C. carburetors
B. spark plugs D. distributors
19. 1858 Ref: Engine, Carburetor A
On small passenger vessels what device must you install under carburetors, other than the downdraft type, to allow ready removal of fuel leakage?
A. A drip collector C. A sponge
B. A funnel and a tin can D. Suitable absorbent material



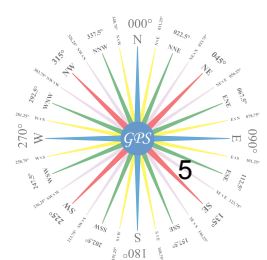
20. 2189 Ref: Engine, Carburetor B
The carburetor is placed on the engine to _____.
A. distribute the gasoline C. properly lubricate the engine
B. mix the fuel and air D. assist in priming the cylinders
21. 3465 Ref: Engine, Carburetor B
Vessels required to be equipped with an approved backfire flame arrester are _____.
A. those with diesel engines C. those with large engines only
B. all those with gasoline engines D. None of the above
22. 622 Ref: Engine, Cooling B
Air-cooled gasoline auxiliary engines are allowed on vessels not more than 65 feet in length, carrying not more than 12 passengers if _____.
A. it is not practicable to supply water to the engine
B. they have a self-contained fuel system and are installed on an open deck
C. they are rated at not more than 4.5 horsepower
D. All of the above
23. 1297 Ref: Engine, Cooling B
If an engine shuts down due to high jacket water temperature, what action should be taken?
A. Open crankcase explosion covers
B. Allow engine to cool gradually
C. Slowly add cool water to the expansion tank
D. Back flush the cooling water system
24. 1859 Ref: Engine, Cooling D
On small passenger vessels which parts of a water-cooled gasoline or diesel engine must be water-jacketed and cooled?
A. The engine's head
B. The block
C. The exhaust manifold
D. All of the above
25. 1863 Ref: Engine, Cooling A
On small passenger vessels, cooling water for the exhaust lines from an internal combustion engine must be _____.
A. obtained from the engine's cooling water system or from a separate engine-driven pump
B. chemically treated to prevent corrosion
C. flushed and changed periodically
D. obtained from a fresh water storage tank or an expansion tank
26. 2811 Ref: Engine, Cooling A
The most serious effect of air trapped in a non-treated diesel engine jacket water cooling system is that it _____.
A. causes corrosion
B. reduces the ability of the system to cool the engine
C. can form pockets which block the flow of coolant through the system
D. accelerates formation of metal plating
27. 2812 Ref: Engine, Cooling A
The most serious effect of oxygen retained in a diesel engine jacket water cooling system is that it _____.
A. causes corrosion
B. reduces the effectiveness of the coolant
C. can form air pockets which exclude coolant contact with hot surfaces
D. accelerates formation of hydrogen peroxide deposits



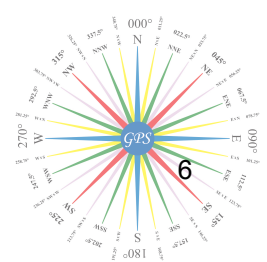
28. 2813 Ref: Engine, Cooling A
The most serious effect of trapped air in a diesel engine jacket water cooling system is that it _____.
A. accelerates erosion
B. reduces the effectiveness of chromate additives
C. can form pockets of high chemical concentrates
D. accelerates formation of sludge deposits
29. 3536 Ref: Engine, Cooling C
What factor is essential to the proper operation of a radiator cooled engine?
A. Cooling water pressure C. Air flow through the radiator
B. Jacket water treatment D. Low heat of combustion
30. 4125 Ref: Engine, Cooling D
When water-cooled engines are installed on small passenger vessels, the cooling system _____.
A. pump must operate whenever the engine is operating
B. must have a suitable hull strainer in the raw water intake
C. may use a closed fresh water system
D. All of the above
31. 624 Ref: Engine, Diesel B
All diesel engines are classified as _____.
A. four cycle C. vacuum ignition
B. compression ignition D. external combustion
32. 633 Ref: Engine, Diesel B
All marine low-speed diesels are of what design?
A. Four-stroke C. Electronic ignition
B. Two-stroke D. Forced exhaust
33. 913 Ref: Engine, Diesel B
Diesel engines are considered safer than gasoline engines because _____.
A. they are more heavily built C. they can be easily reversed
B. the fuel used is less volatile D. they operate at a lower speed
34. 962 Ref: Engine, Diesel A
Each cylinder in a two stroke cycle engine experiences combustion _____.
A. once each crankshaft revolution C. every other crankshaft revolution
B. twice each crankshaft revolution D. every fourth stroke
35. 1139 Ref: Engine, Diesel C
Generally speaking, the fuel injected into a marine diesel engine combustion chamber is ignited by _____.
A. spark plugs
B. glow plugs
C. heat of compression
D. a magneto
36. 1177 Ref: Engine, Diesel B
How does combustion air enter the cylinder of a two-cycle diesel engine?
A. Cylinder head valves C. Turbo chargers
B. Ports D. Bleeder valves
37. 1263 Ref: Engine, Diesel B
How should you warm up a diesel engine that has not been run for some time?
A. Run it at minimum speed until warmed to operating temperature.
B. Idle for a brief period of time and then warm up at half speed.
C. Bring it up to top speed immediately and run until warmed up.
D. Inject ether into the air intake to shorten warm up time.



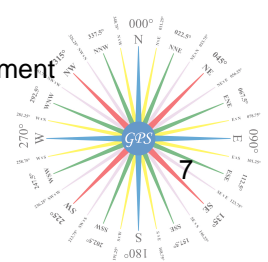
38. 1265 Ref: Engine, Diesel D
How would the exhaust of a properly operating diesel engine appear?
A. Light blue haze C. Light gray haze
B. Light brown haze D. Perfectly clear
39. 1363 Ref: Engine, Diesel A
If you are unable to stop a diesel engine by any other means, you should _____.
A. discharge a CO2 extinguisher in the air inlet
B. pull off the distributor cap
C. secure the jacket water
D. secure the starting air supply valve
40. 1659 Ref: Engine, Diesel C
Lubricating oil should be changed on a heavy duty diesel engine when _____.
A. it gets dark in color C. it has been in use for a specified interval
B. a sample rubbed between fingers feels thin D. it no longer supports combustion
41. 1675 Ref: Engine, Diesel C
Most medium and slow speed diesels are started by what medium?
A. Electric starting motors C. Compressed air
B. Hydraulics D. Ether
42. 1930 Ref: Engine, Diesel B
One major disadvantage of a low-speed diesel as compared to a steam main-propulsion system is _____.
A. the extra weight required for the diesel reduction gearing
B. a minimum speed for the engines that limits the minimum speed of the vessel
C. the higher fuel consumption per SHP
D. the low efficiency of the system when a controllable pitch propeller is used
43. 1943 Ref: Engine, Diesel C
Overspeed of the diesel engine driving an electric generator could cause _____.
A. low voltage trip C. damage to windings
B. reverse power trip D. excessive exhaust temperatures
44. 1944 Ref: Engine, Diesel C
Overspeed of the diesel engine driving an electric generator could cause _____.
A. low voltage trip C. damage to windings
B. reverse power trip D. excessive exhaust temperatures
45. 2110 Ref: Engine, Diesel D
Sudden unloading of a diesel engine can cause _____.
A. decreased fuel efficiency C. black smoke
B. increased exhaust temperature D. overspeed trip
46. 2924 Ref: Engine, Diesel C
The quickest method to stop a small diesel engine whose throttle or governor has become stuck open is to _____.
A. drain the fuel tank C. close the fuel supply valve
B. turn off the ignition switch D. apply the shaft brake
47. 3509 Ref: Engine, Diesel C
What condition will result in the automatic shutdown of a diesel engine?
A. High jacket water pressure C. Low lube oil pressure
B. High lube oil pressure D. Excessive turbo charger speed



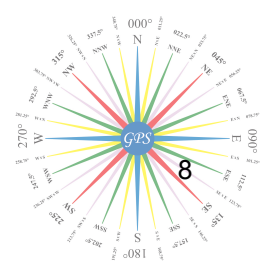
48. 3520 Ref: Engine, Diesel C
What does a pyrometer measure on a diesel engine?
A. Water temperature C. Exhaust temperature
B. Water pressure D. Air box pressure
49. 3559 Ref: Engine, Diesel A
What is an advantage of diesel over steam turbine propulsion?
A. Less fuel consumption per SHP
B. Diesel fuel costs less than bunker C or its equivalent
C. Less routine maintenance required
D. Less weight per SHP
50. 3593 Ref: Engine, Diesel A
What is one effect of running a diesel engine at too cool a temperature?
A. Buildup of sludge in the lubricating system C. Severe heat stresses on mechanical parts
B. Excessive fuel consumption D. Foaming of the lubricating oil
51. 3635 Ref: Engine, Diesel D
What is the effect of heated intake air on a diesel engine?
A. Increases efficiency C. Increases engine life
B. Increases engine horsepower D. Reduces engine horsepower
52. 3740 Ref: Engine, Diesel A
What is the purpose of the intake/exhaust valves in a diesel engine?
A. They regulate the combustion cycle. C. They synchronize the ignition spark.
B. They supply cooling water. D. They supply and regulate the lubricant flow.
53. 3786 Ref: Engine, Diesel D
What monitoring device best indicates the load being carried by a diesel engine?
A. Lube oil pressure gauge C. Tachometer
B. Jacket water temperature gauge D. Exhaust pyrometer
54. 3817 Ref: Engine, Diesel A
What quality of a diesel fuel is most significant for efficient combustion?
A. Volatility C. Flash point
B. Viscosity D. Specific heat
55. 3715 Ref: Engine, Evaps C
What is the operating principal of a flash type evaporator?
A. Sea water is heated to boiling temperature under a vacuum.
B. Sea water is passed over heated plates in a thin film.
C. Heated sea water is injected into a vacuum chamber.
D. Sea water is forced through a heated eductor.
56. 2569 Ref: Engine, Exhaust C
The exhaust pipe must be gas tight throughout its entire length otherwise _____.
A. bilge water may enter the exhaust pipe
B. entry of air may cause vapor lock
C. carbon monoxide may enter the interior of the vessel
D. the joint gaskets may be blown
57. 3856 Ref: Engine, Exhaust A
What would white exhaust smoke from a diesel engine probably mean?
A. Late fuel injection C. High compression temperature
B. Excess combustion air D. Excessive lube oil consumption



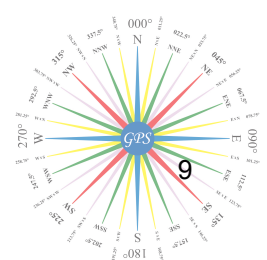
58. 4293 Ref: Engine, Exhaust D
Which is/are required for engine exhaust pipe installations on small passenger vessels?
A. Protection where people or equipment can contact the pipe.
B. Piping must be arranged so that water backflow cannot reach the engine exhaust ports
C. Dry exhaust pipe ending at the transom should be located as far outboard as possible
D. All of the above
59. 282 Ref: Engine, Fuel C
A safe fuel system must _____.
A. prevent engine overheating C. be liquid- and vapor-tight
B. have proper air/gasoline fuel mixture ratio D. supply sufficient air to the intake manifold
60. 765 Ref: Engine, Fuel A
At a refueling area or fuel facility, smoking or any flame or spark is prohibited _____.
A. within 50 feet C. during refueling operations
B. anywhere on the helodeck D. within 100 feet
61. 1136 Ref: Engine, Fuel D
Gasoline tanks should be filled _____.
A. to the top to expel all vapors from the tanks
B. to the top so the operator is certain how much fuel he has aboard
C. with only sufficient fuel for the planned trip so excess gasoline is not carried
D. to near the top with some space allowed for gasoline expansion
62. 1660 Ref: Engine, Fuel D
Maintaining good working order of fuel pumps and injectors in auxiliary diesel engines requires the use of _____.
A. fuel/water separators C. an injector test stand
B. day tanks D. fuel filters
63. 1941 Ref: Engine, Fuel D
Outlets in gasoline fuel lines are _____.
A. permitted for drawing fuel samples
B. permitted for draining fuel from lines
C. permitted for bleeding air from lines
D. prohibited
64. 2829 Ref: Engine, Fuel A
The nozzle of a gasoline hose or can should be kept _____.
A. in contact with the fill opening to guard against static spark
B. from making contact with the fill opening to guard against static spark
C. in contact with the fill opening to allow proper venting
D. None of the above
65. 3417 Ref: Engine, Fuel C
Upon completion of fueling a gasoline driven vessel it is necessary to _____.
A. keep ports, doors, windows, and hatches closed
B. start engines immediately
C. ventilate before starting engine
D. None of the above
66. 3979 Ref: Engine, Fuel C
When fueling has been completed _____.
A. the fuel tank fill pipe should be left open to allow vapors to vent from the tank
B. the engine should be started immediately to prevent vapor lock in the fuel line
C. all hatches should be opened and all compartments should be ventilated
D. open the fuel line and drain a small amount of gasoline into the bilge to clear the line of sediment



67. 4204 Ref: Engine, Fuel B
Which device is required in the fuel supply line at the engine?
A. Flow meter C. Pressure gauge
B. Shut-off valve D. Filter
68. 4436 Ref: Engine, Fuel D
Which statement is FALSE concerning precautions during small craft fueling operations?
A. All engines, motors, fans, etc. should be shut down when fueling.
B. All windows, doors, hatches, etc. should be closed.
C. A fire extinguisher should be kept nearby.
D. Fuel tanks should be topped off with no room for expansion.
69. 4936 Ref: Engine, Fuel D
You discover a leak in the fuel line to the engine. You should FIRST _____.
A. activate the CO2 system C. start the bilge pump
B. make a temporary repair with canvas or tape D. close the fuel valve at the tank
70. 2996 Ref: Engine, Fuel, Air B
The shut off valve at the gasoline tank which can be operated from outside the tank space _____.
A. controls the amount of gasoline to the engine C. is used if the gasoline tank leaks
B. shuts off the gasoline supply at the tank D. All of the above
71. 1276 Ref: Engine, Gasoline A
If a gasoline engine turns over freely but will not start, the cause is generally _____.
A. a defective ignition system C. weak valve springs
B. low lube oil level D. too heavy a load
72. 1846 Ref: Engine, Gasoline D
On small passenger vessels a gasoline engine must be fitted with _____.
A. A means of backfire flame control C. Jacket water discharge temperature gauges
B. A lubricating oil pressure gauge and a tachometer D. All of the above
73. 3346 Ref: Engine, Gasoline, Jacket D
To find the cause of a gasoline engine's failure to start, you should _____.
A. break the joint in the fuel line at the engine and let the gas run in the bilges
B. disconnect the wires at the spark plugs and make the spark jump the gap
C. prime the engine with ether through spark plug openings
D. ventilate the space, then check the battery, spark plugs, carburetor, and fuel line
74. 4107 Ref: Engine, Generators D
When two generators are operating in parallel, what will happen if one engine driving a generator shuts down?
A. The generator that's still running will motorize.
B. Both generators will immediately shut down.
C. The running generator's circuit breaker will immediately trip on overload.
D. The stalled generator's circuit breaker will trip on reverse power.
75. 1005 Ref: Engine, Generators, Jacket C
Electric generators can be protected against overload _____.
A. with switches C. with fuses or circuit breakers
B. with a governor on the engine D. by using heavy wire
76. 590 Ref: Engine, Gauges C
After an engine is started you should _____.
A. increase engine speed to insure adequate flow of oil to all parts of the engine
B. pay no attention unless there are unusual noises from the engine
C. check operating pressures and temperatures, and check for leaks
D. run the engine at idle until the temperature has increased



77. 3265 Ref: Engine, Overheating C
The three conditions which cause engine shutdown are overspeed, low lube oil pressure, and _____.
A. high lube oil pressure C. high jacket water temperature
B. high jacket water pressure D. low jacket water pressure
78. 493 Ref: Engine, Shaft D
A wobbling tail shaft is an indication of _____.
A. shallow water C. a tight tail shaft gland
B. an engine that is misfiring D. worn stern bearing or misalignment
79. 3805 Ref: Engine, Solenoid Valve C
What power source actuates a solenoid valve?
A. Air pressure C. Electric current
B. Hydraulic pressure D. Mechanical force
80. 805 Ref: Engine, Start Up A
Before starting any diesel or gasoline engine, which of the following must be checked?
A. Oil level C. Exhaust discharge
B. Flow of cooling water D. All of the above
81. 3494 Ref: Engine, Starters B
What are the three basic types of engine starters?
A. Air, water, electric C. Metered, hydraulic, automatic
B. Air, hydraulic, electric D. Air, emergency, hydraulic
82. 3591 Ref: Engine, Stern Tube D
What is NOT used as a stern tube bearing, on a large vessel?
A. Wooden (lignum vitae) strips C. Resin bonded composition
B. Hard rubber D. Bronze bushings
83. 3841 Ref: Engine, Stern Tube A
What type of stern tube bearing has the least friction?
A. Oil-lubricated bearings C. Hard rubber
B. Lignum vitae D. Bronze bushings
84. 804 Ref: Engine, Vent B
Before starting a gasoline engine on a motorboat, you should make sure for safety that _____.
A. the gasoline tank is full
B. the bilges, cabins, etc. are thoroughly ventilated
C. you have fresh water on board
D. Each of the above is followed
85. 810 Ref: Engine, Vent D
Before you start an engine in a compartment, it's MOST important to _____.
A. check the flame arrester C. check the battery
B. check the fuel tank D. ventilate the bilges
86. 1133 Ref: Engine, Vent C
Gasoline fuel tank vents should terminate _____.
A. in the engine compartment C. above or outside the hull
B. in the fuel tank space D. at the most convenient location
87. 2095 Ref: Engine, Vent D
Starting motors, generators, and other spark producing devices should be mounted as high above the bilges as possible to _____.
A. keep them dry when the bilges are full of water
B. keep them cool when the vessel is underway
C. make them more accessible for repairs
D. prevent accidental ignition of any gasoline vapors that may have accumulated in the bilges



88. 4456 Ref: Engine, Vent A
Which statement is TRUE concerning fuel vapors on a vessel?
A. Fuel vapors gather in the lowest portions of the vessel.
B. Fuel vapors can only be ignited by an open flame.
C. Vent outlets should be located above the level of the carburetor air intake.
D. None of the above
89. 4457 Ref: Engine, Vent A
Which statement is TRUE concerning gasoline vapors on board a vessel?
A. They are heavier than air and will settle in the lowest part of the vessel.
B. They are lighter than air and will settle in the highest part of the vessel.
C. They should be vented into the engine to improve combustion.
D. They should be vented into the wheelhouse.
90. 4695 Ref: Engine, Vent B
Why is it necessary to extend ventilators of gasoline powered vessels to the bilges?
A. To keep them dry, and thus easier to clean
B. To remove fuel vapors which are heavier than air
C. To provide adequate air to the engines
D. To cool the machinery areas
91. 5125 Ref: Engine, Vent, Jacket D
Your vessel has a gasoline engine and a mechanical exhaust ventilation system. BEFORE starting the engine, the exhaust blower should be run long enough to _____.
A. warm up the exhaust blower motor
B. provide a proper supply of fresh air for the engine(s)
C. see the system is in good operating condition
D. insure at least one complete change of air in the compartments concerned
92. 792 Ref: Engine, Vent, Pyrometer A
Before any machinery is put in operation, you should _____.
A. ventilate all compartments, see that the machinery is clean and there are no obstructions
B. just turn the key and start up
C. take for granted that there are no fuel leaks
D. assume there are no volatile fumes in the engine space
93. 1582 Ref: Engine, Wiring C
Individual wires, used in systems greater than 50 volts, _____.
A. should be supported at 24 inch intervals with plastic tie wraps
B. should never be located in a tank
C. must be installed in conduit
D. All of the above
94. 2916 Ref: Engine, Wiring B
The purpose of fuses in electric wiring is to _____.
A. allow for cutting out branch circuits
B. prevent overloading the circuits
C. reduce voltage to the branch circuits
D. permit the use of smaller wiring for lighting circuits

