

Passage 1 (原题库第1篇)

Valve drive mechanism

The valve drive mechanism commands the inlet and exhaust valves at the required timing.

第3题 The valve drive mechanism consists of an inlet and exhaust cam follower (8) each suspended in a bracket of the tappet assembly (7), two tubular push rods (4) with ball joints, two nodular cast iron rocker arms in a rocker arm bearing bracket, two yokes (5) and a yoke guide pins. See Fig. 4-1.

The tappet roller follows the cam profile and transfers the movements through push rods to the rocker arms.

第4题 The rocker arms operate the inlet and exhaust valves through yokes (5).

Lubrication for the rocker arms comes from the engine's secondary oil supply manifold through drillings in the cylinder head and rocker arm bracket.

第2题 The tappet assembly receives lubricating oil via channels in the engine block from the main supply manifold. For the roller and shaft, the oil is supplied through the guiding plunger.

第4题 To compensate for heat expansion a clearance must exist between the rocker arm and yoke. 第1题 All adjustments have to be done on a cold engine only.

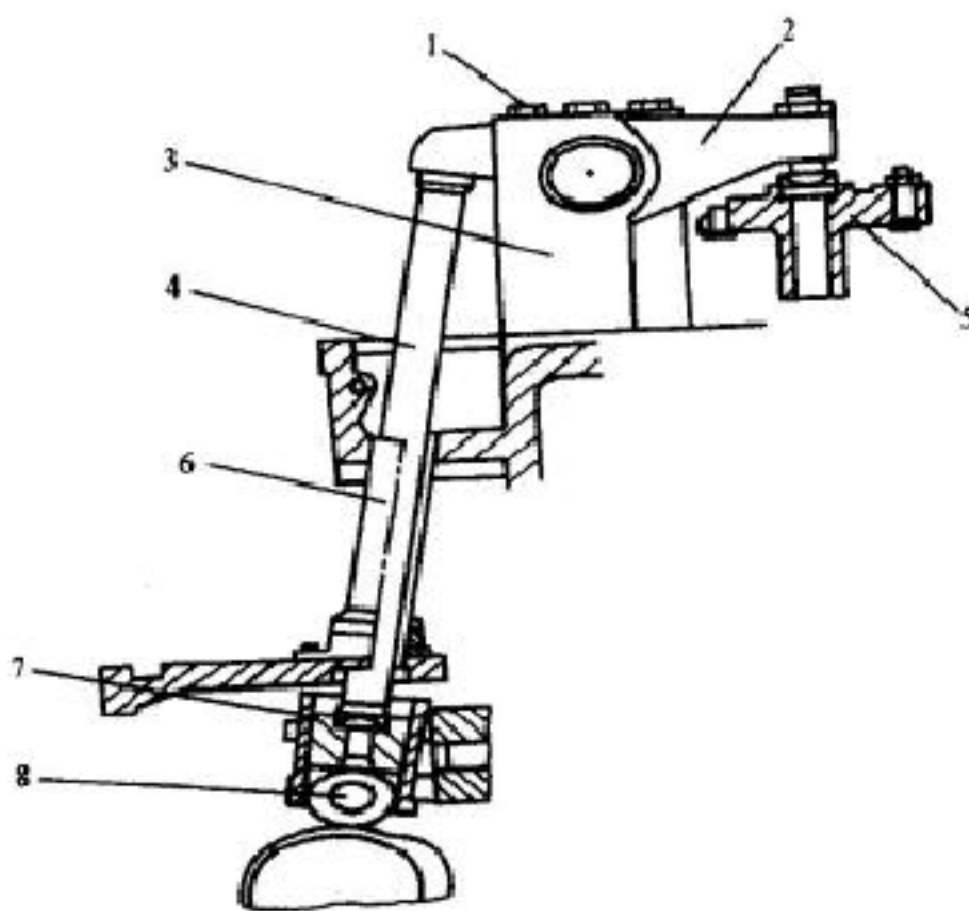


Fig.4-1 Valve drive mechanism

1. According to the Passage, the best time to adjust the valve clearance is ____.

- A. before the engine is started B. when the engine is running
C. after the engine has just been stopped D. when something has gone wrong with the engine
注：根据文章来看，调节阀间隙的最好时间是在发动机启动之前。

2. The roller and the tappet assembly are lubricated by means of ____.

- A. the main lube system B. the secondary oil system
C. the special pumping system D. the turbine oil system
注：滚轮和挺杆组件借助于主润滑系统润滑。

3. According to the Passage, the valve drive mechanism does not include ____.

- A. tappet roller B. push rods C. nodular cast iron D. yokes and guide pins
注：根据文章来看，阀驱动机构不包括球墨铸铁。(包括挺杆滚轮、顶杆、吊梁和导销)

4. To close valves tightly, which clearance should be inspected according to the maintenance schedule?

- A. The one between the cam and the tappet roller B. The one between the push rods and the ball joints.
C. The one between the rocker arms and the yoke D. The one between two tubular push rods.

注：依据保养清单，要紧密的关闭阀件，应检查摇臂和吊梁之间的间隙。

Passage 2 (原题库第3篇)

Charge air cooler

The engine is equipped with a charge air cooler. The insert type charge air cooler is mounted in a water jacket (air trunk). The trunk is bolted to the engine block.

第1题 Standard is a two-stage cooler mounted. The first stage, through which the charge air flows, is cooled by water from the cooling system and cools the charge air till approx. The second stage is supplied with water coming from the water system and cools the charge air further till the required temperature of approx.

第2题(B) By controlling the water flow through the LT cooler the charge air temperature can be kept constant at the required temperature.

The circulating coolant water should always be under positive pressure and should be as clean as possible. The operating air temperature should be maintained by controlling the coolant inlet temperature.

Whilst the engine is running the air and coolant temperatures and pressures at inlet and outlet should be monitored and logged periodically. 第3题 Variations from normal indicate faults developing such as fouling of the filter or obstruction of the water tubes.

第4题 Check daily, during operation of the engine, the working of the telltale hole at the free end of the charge air receiver. The function of this hole is to inform the operator the presence of water in the charge air receiver. In normal condition only compressed air should escape from this hole.

1. According to the Passage, the expression "HT" probably means_____.

- A. HIGH TANK B. HIGH TEMPERATURE C. HEAT TRANSMISSION D. HEAT TRANSFER

注：根据文章来看，"HT"的意思是：high temperature高温。

2. In order to maintain the charge air temperature we should control_____.

- A. the coolant inlet temperature coming from the first stage cooler
B. the coolant flow coming from the second stage cooler
C. the coolant outlet temperature coming from the second stage cooler
D. the coolant flow coming from the first stage cooler

注：为维持增压空气的温度，我们应控制来自第二级冷却器的冷却剂流量。

3. The charge air temperature departing from normal may indicate that_____.

- A. condensate can be formed
B. only compressed air should escape from the telltale
C. the film plates are becoming dirty or the water tubes are blocked by scale
D. cooling water may have been carried into the cylinders

注：增压空气温度偏离正常表明镀膜变脏或水管被水垢堵塞。

4. The function of the telltale hole is to_____.

- A. detect whether compressed air has escaped from the hole
B. control the coolant inlet temperature
C. determine whether the coolant water is under positive pressure
D. inform the operator the presence of water in the charge air receiver

注：警报孔或监视孔的作用是同志作业员扫气箱中有水。

telltale hole 监视孔，指示孔，警报孔；

charge air receiver 扫气箱

Passage 3 (原题库第6篇)

第1题 At the first start, listen carefully for possible jarring sounds. If anything is suspected stop the engine immediately, otherwise stop the engine after 5 minutes' idling. Check at least the temperatures of the main bearings and of all other bearings which have been opened. Make visual inspection from below to the cylinders and piston skirts which have been opened. If everything is in order, restart.

第4题(A) Check that there is no leakage of gas, water, fuel or lubricating oil. Especially observe the

fuel pumps and injectors. 第4题(B) Watch the quantities emerging from the leak oil pipes!

Check that the starting air manifold is not hot at any cylinder (leaky starting valve may cause explosion). After overhaul, the following instructions are important:

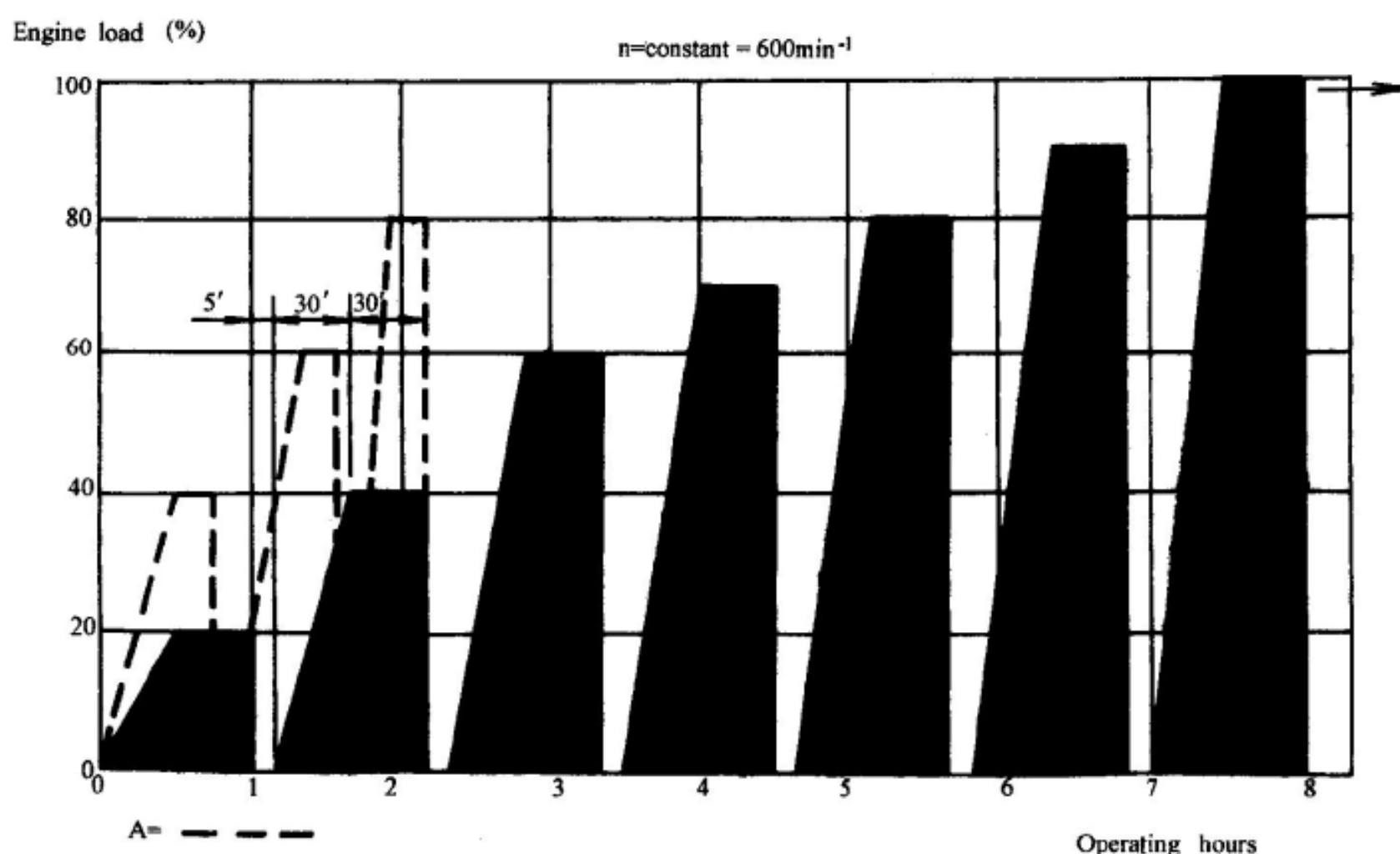
- check pressure and temperature gauges.
- check the automatic alarm and stop devices.
- check the pressure drop over the fuel filter and lubricating oil filter. 第2题(C)
- check the oil level in the oil sump. 第1题(D)

Estimate the condition of the oil.

- check the de-aerating of the engine circulating water system. 第2题(A)
- check the quantity of fuel. 第4题(C)
- check the telltale holes for leaks.
- check the circulating water quantity. 第2题(B)
- check the cylinder pressures.
- listen for jarring sounds.
- check the crankcase pressure.
- check the starting air manifold.

Running-in is mainly intended to let piston rings "wear" to fit properly in the cylinder liner.

第3题(D) Do not continuously run at constant load during the running-in process (Fig. 4-4).



It is important to vary the load several times. The ring grooves in the piston will have a different contact line to the cylinder liner wall.

1. Paragraph 1 tells us that_____.

Fig.4-4 Running-in procedure

- A. If we hear vibration sounds, we should stop the engine quickly, or allow it to operate at low speed for 5 minutes, then stop it and check everything
- B. If we hear vibration sounds, we should stop the engine quickly, otherwise the engine will be stopped after 5 minutes
- C. If we hear explosion sounds we should stop the engine then check everything
- D. if we hear surging sounds, we should stop the engine immediately otherwise after 5 minutes the engine will be destroyed

注：从第一段可知，如果听到震动声，应快速停车，或让它低速运行5分钟，然后停车并检查所有部件。

2. After overhaul, following instructions are important except_____.

A. release air from the engine circulating water system

B. treat the circulating water if necessary

C. make sure the pressure drop is enough besides the fuel filter

D. make sure the quantity of lube oil meets the requirement

注：检修之后，确保除了燃油过滤器以外的压降足够大的指令不重要。besides=in addition除了...以外，还...

3. After piston overhaul, the running-in process should be carried out_____.

A. periodically at steady load B. occasionally at various load

C. continually at constant load D. continually at various load

注：活塞检修之后，磨合过程应在各种负载状态下连续进行。

4. When dealing with engine troubles, _____.

A. no leakage of lubricating oil should be checked.

B. quantities of oil emerging from the leak oil pipes must be watched

C. quality of the leak oil must be watched

D. the number of the leaking fuel lines should be checked

注：处理发动机故障时，一定要观察在漏油管路中出现的油量。

Passage 4 (原题库第 18 篇)

第 2 题 The cooling water in the HT (high temperature) circuit cools the cylinder liners, cylinder heads and turbocharger. From the pump water is supplied to the engine manifold which is cast in the engine block. manifold the water is distributed to all cylinder liner sections and from each liner upwards through the channels in the liner collars. From the liner collars further into the cylinder heads. In the cylinder head forced by an intermediate deck to flow along the flame plate around the valves to the exhaust valve seats and up along the fuel injector sleeve. From the cylinder head the water is discharged via a connection piece in the manifold.

第 3 题 The return water from the cylinder heads and turbocharger is supplied to the HT air cooler. In this cooler, most of the heat from the charge air is extracted.

第 1 题 The LT circuit water cools the charge air in the second stage. The necessary cooling for the LT water comes from a central cooler. By controlling the LT water temperature to the inter-cooler the correct charge air temperature can be obtained.

For preheating purposes, a heater circuit with a pump and heater are connected in the HT circuit before the engine starts.

第 4 题 Before starting, the HT circuit is heated to 60°C by a hot oil heater. The preheating of the engine is of utmost importance prior to starting up and loading on HFO.

1. From the Passage we know that the charge air temperature was controlled by_____.

A. sea water from a central cooler B. fresh water from a central cooler

C. fresh water from a HT circuit D. fresh water from the LT circuit

注：从文章来看，我们了解到增压空气温度由来自低温回路的淡水控制。

2. The cooling water to cool the engine was forced_____.

A. into the cylinder block and then upwards into the cylinder head

B. into the cylinder intermediate section and then upwards into the cylinder head

C. into the cylinder head and then downwards into the cylinder block

D. into the cylinder ends and then further into the cylinder intermediate

注：冷却发动机的冷却水被迫进入汽缸体然后向上进入汽缸头（缸盖）

3. After the charge air is discharged into the HT air cooler, _____.

A. the charge air temperature will become higher B. the charge air temperature will become lower

C. the HT water temperature will remain constant D. the HT water temperature will become lower

注：增压空气排入高温空冷器后，增压空气温度变低。

4. Which of the following devices may be used to warm the engine prior to starting?

- A. A high temperature cooling water system
B. A low temperature cooling water system
C. A central cooler
D. The second stage cooler

注：高温冷却水系统在启动之前用于暖机。

Passage 5 （原题库第 19 篇）

Starting air system

The engine is started with compressed air of max 30 bar. Minimum pressure required is 15 bar. A pressure PI301 mounted on the starting air line before the main starting valve has an indicator in the instrument panel.

第 3 题 The supply line from the starting air bottles is provided with a non return valve and a drain valve.

The solenoid valve is electrical (remote control) or manual (on the engine) operated and send after acti air signal to the main starting air valve. Interruption of the control air doses the main starting air v

第 1 题 (After the main starting air valve is activated the air flows through the flame attesters to the in the cylinder heads. Part of the air flows via the starting air distributor on each of the starting air valves in the

cylinder heads. The starting air distributor controls the timing of opening and closing of the starting

第 2 题 On the moment the main starting air valve is operated, also the booster is energized. The main

starting air line is provided of a safety valve. 第 4 题 Interlock valve is a safety device to avoid an engine start engaged turning gear.

1. As the engine is started with compressed air, the correct sequence of the following devices being act

(1) solenoid valve; (2) starting air valve; (3) starting air distributor; (4) main starting air valve; (

- A. (1), (5), (4), (2) B. (3), (4), (5), (3) C. (2), (4), (3), (2), (5) D. (4), (3), (1), (2), (5)

注：从括号部分总结出，发动机由压缩空气启动时，装置被触发的顺序是：电磁阀、主启动阀、调速器升压器、启动空气分配器、启动空气阀。

2. The sentence "the governor booster is energized" (paragraph3) probably means_____.

- A. the governor booster is supplied with electric power
B. hydraulic oil is pumped into the governor booster
C. the governor starts to work before starting the engine

D. the governor booster is supplied with pressurized air before starting the engine

注：句子“调速器升压器被提供能量”大概意思是：启动发动机之前，调速器升压器被提供增压空气。

3. Which of the following components are attached to the air bottles?

- A. a pressure transmitter PT 301 B. a non-return valve and a drain valve
C. a solenoid valve D. a starting air distributor

注：答案应为 B。连到空气瓶的部件是：止回阀和放残阀。

4. When the engine is engaged with turning gear, _____ can keep the engine from starting

- A. the control air B. the solenoid valve C. the main starting air valve D. the interlock valve

注：发动机由盘车机啮合时，连锁阀可防止发动机启动。

Passage 6 （原题库第 20 篇）

Starting air distributor

第 1 题 The starting air distributor is of the piston type with precision machined parts. The liners as well as the pilot pistons are of corrosion resistant material. 第 3 题 The pilot pistons are controlled by a cam

connected to the camshaft end. When the main starting valve opens, the pilot pistons are pressed onto the cam,

whereby the pilot piston for the engine cylinder which is in starting position admits control air to the

the starting valve. 第 2 题 The starting air valve opens and admits compressed air into the engine cylinder for

piston down. Shortly before the exhaust valves are opened the pilot valve interrupts the control air to

valve and starting air to that cylinder is stopped. This procedure will be repeated as long as the main

activated or until the engine speed is so high that the engine fires. After the main starting air valve

starting air system is de-aerated, the pressure drops quickly and the springs will lift the pilot plunger

means that the pilot plungers touch the cam only during the starting process and thus wear is insignificant.

If a pilot liner is worn out, press it out. It may be necessary to heat the distributor up till about 200°C as **Loctite** used for fixing and sealing.

1. According to the Passage, the liners of the starting air distributor ____.

- A. can be replaced when worn out B. are made of heat resistant materials
C. are welded precisely D. are worn out easily during the starting process

注：根据文章来看，启动空气分配器的衬套磨坏时，可更换。**changeable可更换的**

2. During the starting process, when ____, the main starting air valve is closed.

- A. the exhaust valves in the starting cylinder are opened B. the pilot air to the starting air valve is stopped
C. the engine speed reaches fire speed D. the pilot pistons are pressed onto the cam

注：启动过程中，当发动机转速达到发火转速时，主启动空气阀关闭。

3. When some cylinder of the engine admits compressed air into it, the pilot piston of the starting air valve ____

- A. separated from the cam B. pressed onto the cam
C. lifted off the cam D. pressed onto the cam repeatedly

注：当部分汽缸允许压缩空气进入时，启动空气分配器的先导活塞被压到凸轮上。

4. From the Passage we know that "Loctite" is probably ____

- A. a type of gasket B. a kind of lubricant C. a glue bond D. an anti-corrosion additive

注：从文章当中我们了解到，"Loctite"可能是一种粘合剂。**glue bond粘合剂**

Passage 7 (原题库第 21 篇)

Maintenance and overhauling

第 1 题 Satisfactory and proper operation of the engine depends not only on correct manoeuvring but also well it is kept in order. Regular maintenance of the engine helps a lot in preventing early wear of parts a long service as well as the working efficiency of the engine. Instruction books are to be referred to whenever necessary.

The individual parts of the engine should be inspected and thoroughly cleaned at **第 2 题** regular intervals. periods for such overhaul work depend largely on the quality of the lubricating oil and fuel, on the load efficiency of the operator in locating troubles and remedying them in time.

All pipes should be pressure-relieved before the repair work is started. Read the pressure gauges and/or check the pipes by carefully loosening the screw plugs or connections.

第 3 题 If some parts of the running gear are dismantled, before using the turning gear, make sure the parts are jammed in the crankcase where it is easy for them to cause damage.

During dismantling work, lubrication lines and orifices must to be sealed off.

The pistons, as a rule, should be dismantled after a period of operation and cleaned with the piston oil **if necessary**. **第 4 题** If the piston rod stuffing box is carefully handled and thoroughly greased, it requires only when the piston is removed. In such a case, the gap clearance of the sealing rings and fire rings must be the original value and the worn-out parts replaced.

1. To keep the engine working properly, ____.

- A. everyday maintenance is necessary B. it must be handled with instruction books in hand
C. engine parts should be kept in order D. it should be manoeuvred correctly and maintained at regular intervals

注：为保持发动机良好工作，他应该正确的操纵并定期保养。

2. The periods for overhaul mainly depend on ____.

- A. whether the lubricating oil and fuel are of good quality B. what the load of the ship is
C. whether the operator can find troubles as well as solutions to them D. all the above factors

注：检修周期的长短主要取决于：滑油和燃油品质是否良好；船舶负载情况；操作员是否能找出故障以及是否能快速解决。

3. It is **necessary** to make sure that there are no loose parts left in the crankcase before using the turning gear because_____.

- A. some parts of the running gear have been dismantled
- B. during dismantling work, lubrication lines and orifices are sealed off
- C. loose parts jammed in the crankcase are likely to cause damage**
- D. pipes are relieved of pressure before the repair work

注：有必要确保实用盘车机之前，没有松动部件留在曲轴箱中，因为曲轴箱中震动的部件可能会造成损坏。

4. When does the piston rod stuffing box require overhaul?

- A. When some parts are worn out.
- B. When the piston is removed.**
- C. When it has not been checked for some time.
- D. When the piston rings need to be renewed.

注：活塞移除时（吊缸时），需检修活塞杆填料箱。

Passage 8 （原题库第 24 篇）

Troubles may occur when the engine is running

第 1 题 If the engine does not start on air, it may be due to one or more of the following causes: starting air pressure too low, incorrect timing of starting air valves, one or more of the starting air valves stuck, **line closed**, or if starting after working on the engine, the turning gear still engaged.

第 2 题 If the engine does start on air, but combustion does not immediately begin, the **cause** may be low compression, failure of the fuel pumps to discharge oil into the fuel valves or incorrect timing of fuel

Failure of fuel injection is usually due to trouble in the fuel **第 3 题** However, the injection may be delayed, though the pumps are in good order, if the fuel lines to the injection valves have not been

第 4 题 If the action of the engine indicates that **some** of the cylinders are not firing, the ones affected may be determined by watching the exhaust temperature.

1. If the engine does not start on air, the causes may be_____.

- A. the turning gear is not engaged
- B. the starting air pressure is too high
- C. the timing of starting air valves is not correct**
- D. the stop valve in the fuel line is closed

注：发动机依靠空气没有启动的原因：启动空气阀定时不正确。

2. If combustion does not begin right after the engine has started on air, the causes may be all but one of the following statements?

- A. The timing of fuel pumps incorrect**
- B. The compression is low
- C. Fuel pumps fail to discharge oil into the fuel valves
- D. The starting air pressure is too low**

注：发动机已经依靠空气启动之后，燃烧没有立刻开始，不包括的原因：启动空气压力太低。

3. Even if the fuel injection pumps are working properly, the fuel injection may be delayed if_____.

- A. there is still air in the fuel lines to the injection valves**
- B. the engine indicates that some of the cylinders are not firing
- C. strainers and fine filters in the fuel oil systems have not been cleaned in time
- D. dirt has got under a fuel injection pump valve

注：即使燃油喷射泵运行良好，如果仍然有空气在通到喷油阀的燃油管路中，喷油也会被延迟。

4. When some of the cylinders are not firing, the ones affected may be determined by_____.

- A. testing the starting air pressure
- B. watching the exhaust temperature**
- C. checking the action of the engine
- D. cleaning the turning gear

注：部分汽缸没有发火时，受影响汽缸可通过观察排气温度的方法确定。

Passage 9 （原题库第 26 篇）

Supercharging and Scavenging

Air supply is very important to the perfect combustion of fuel oil in the diesel engine. As the air density determines the maximum weight of fuel that can be burned per working stroke in the cylinder, it also determines the maximum power that can be developed by the engine. If the charge-air density is increased by a compressor,

enters the cylinder, a greater amount of fuel can be burned, resulting in an increase of power output. This is the principle of exhaust turbo-charging.

In today's practice, the compressor, i.e. a blower, is driven by the heat energy obtained from the engine exhaust gases. The turbo-blower comprises a gas-turbine driven by the engine exhaust gases and directly coupled to the blower, which draws fresh air from the engine-room and discharges it into the air inlet manifold on the engine.

第1题(B) The power produced in the turbine must be equal to that required by the compressor. The air is pumped into the cylinder through the inlet ports. The turbo-blower is provided with a filter-silencer.

第2题 It is usually desirable to fit charge-air coolers to turbo-charged two-stroke engines. As the charge-air density increases, the amount of air flowing into the cylinder increases as the charge-air temperature lowers, the exhaust temperature and the engine thermal load are reduced.

第4题 It is very important that each cylinder should be well scavenged before the charged air is compressed, otherwise this fresh air charge will be fouled by the residual exhaust gases. **第3题** The necessary scavenging is obtained by providing a satisfactory pressure difference between the air manifold and the exhaust manifold.

1. Which statement is not true about the compressor when it is working?

A. The air is pumped into the cylinder through the inlet ports.

B. The power produced in the turbine does not have to be equal to that required by the compressor.

C. The compressor is driven by the heat energy obtained from the engine exhaust gases.

D. The turbo-blower is provided with a filter-silencer.

注：压气机工作时，不正确的说法是：涡轮产生的功率不一定必须等于压气机所需功率。

2. The main purpose to fit the charge-air cooler is to ____.

A. lower the air temperature

B. reduce the engine load

C. condense the moisture to drain the condenser **D. increase the mass of charge air flowing into the cylinder**

注：安装增压空气冷却器的主要目的是：增加流入汽缸的增压空气量。

3. Which of the following measures can improve the scavenging effect?

A. To compress the charge-air and discharge it into the air inlet manifold.

B. To cool the charge-air and increase its density.

C. To clean the exhaust gases and reduce its temperature.

D. To increase the charge-air manifold pressure and decrease the exhaust manifold back-pressure.

注：可提高扫气效果的措施：增大增压空气总管的压力，降低排气总管背压，（获得较好的压差）

4. Why is it very important that each cylinder be well scavenged before the charged air is compressed?

A. Because the temperature difference between the exhaust gas and the fresh air is too high.

B. Because the exhaust gas is well cooled by the fresh air charge.

C. Because the fresh air charge will be contaminated by the exhaust gases.

D. Because the pressure difference between the exhaust gas and the fresh air charge is too high

注：增压空气被压缩之前，每个汽缸充分扫气的原因：新填充的空气会被废气污染。

Passage 10 （原题库第27篇）

The engine's supporting element consists of a bedplate and frame. The bedplate can be of welded or cast steel.

第4题(A) The frame is made of cast iron. **第8题** The turbocharger mounting, the housing for the air cooler and the charging air receiver are cast as an integral part of the frame. **第4题(B)** The main bearings are mounted in bores in the frame and secured with main bearing caps of steel. The caps are guided sideways and secured by means of threaded studs and nuts that are tightened hydraulically. The caps are also secured by bracing screws in the frame.

The bearing shells are produced with a tolerance that makes it possible to change them as a set at a time without scraping-in.

The top flanges of the cylinder liners are forced against the top face of the frame by the cylinder cover bolts.

at the bottom they are guided by a bottom flange through which they are free to expand under the effects of pressure. **第 4 题(C)** Tightness between the water chamber and the crankcase is achieved with two rubber rings inserted in the guide surface of the cylinder liner.

第 3 题 The camshaft is driven from the crankshaft through a gearing, which is mounted on the engine's end and covered by a 2-part shield. The camshaft runs in steel bushes lined with white metal.

In each side of the frame, large openings are provided for inspection of roller guides, cams and the bearings. The openings have covers, some of which are provided with crankcase explosion relief valves to release the pressure if the oil vapors in the crankcase are ignited, for example as a result of hot running.

The ~~bedplate~~ can be used as a lubricating oil reservoir and is therefore provided with a dipstick. The oil can, however, be drained off to a special bottom tank, so that the engine runs with a dry sump.

第 3 题 A fuel oil pump of the gear type is driven from the camshaft through a clutch. A lubricating oil pump which is of the same type, is driven by a clutch mounted on the end of the crankshaft or, for propulsion, by a flexible gear wheel drive.

1. This Passage is mainly about_____.

- A. the construction of an engine B. how the engine works
C. the lube and cooling system of an engine D. when the crankcase explosion occurs

注：这篇文章主要是关于发动机结构的。

2. Which of the following is NOT mentioned as an integral part of the frame?

- A. Turbocharger mounting **B. Bearing caps** C. Air cooler housing D. Scavenging air reservoir

注：没有提到的发动机组成部件是：轴承盖。

3. The camshaft_____.

- A. is supported by bearings B. may not drive the fuel oil pump in some cases
C. will not drive a lube oil pump **D. All of the above are true.**

注：凸轮轴由轴承支撑，某些情况下不驱动燃油泵，凸轮轴也不驱动滑油泵。

4. Which of the following is NOT true?

- A. The frame is made of cast iron. B. There are underslung bearings in this engine.
C. Four rubber rings ensure the tightness between the crankcase and the water chamber.
D. Relief valves are provided on the frame.

注：4 条橡胶环确保曲轴箱和水室之间的紧固度是错的。

Passage 11 (原题库 28 篇)

第 2 题(A) The cylinder cover is made of cast iron and is provided with two inlet valves, two exhaust valves and a central mounted fuel injection valve and an indicator. **第 3 题(A)** The inlet valves are mounted with separate seating rings made of special heat-resistant iron. These rings are pressed into the cylinder cover in cooled conditions.

第 3 题(C) The exhaust valve seatings are special, water-cooled seating rings. These rings are pressed into the cylinder cover in cooled conditions.

Each cylinder cover is provided with cooling water from a screwed-on tubular cooling water jacket through bores in the thick bottom of the cover. Each of the radial bores is connected to two side bores. The cover has separate bores that lead to the cooling water jacket and the bores in the cylinder cover to a common outlet.

第 3 题(B) The cylinder cover and cylinder liner are assembled by means of four threaded studs screwed into the cover. Tightening is effected by means of hydraulic tools, and sealing by means of a thin ring mounted between the cover and the cylinder liner. **第 2 题(B)** A starting valve is mounted on the side of the cylinder cover.

第 4 题(A) The engine has oil-cooled pistons of cast iron. **第 4 题(B)** The pistons are provided with three compression rings and a spring-loaded scraper ring. A space for cooling oil is provided at the top of the piston.

第 4 题(C) The scraper ring prevents lubricating oil from being drawn up into the combustion chamber.

Oil for cooling the piston crown is led from a bore in the crankshaft through a channel in the connecting rod journal, to the bushing for the gudgeon pin. This bushing is provided with an annular groove.

which part of the oil is led for lubricating the gudgeon pin. The remaining oil continues through bores pin and the piston to piston cooling chamber.

1. This Passage is mainly about_____.

- A. cylinders and cylinder covers B. cylinders and pistons
C. cylinder covers and pistons D. cylinders and oil

注：这篇文章主要是关于汽缸盖和活塞的。

2. Which of the following may be provided on top of the cylinder cover?

- A. Two exhaust valves B. A starting valve C. An indicator D. All of the above

注：在缸盖顶部配备的是两个排气阀。C 应为 indicator valve.

3. Which of the following is true?

- A. The inlet valve seating rings are of heat-resistant cast steel.
B. There are six studs by which the cylinder cover and liner are tightened.
C. The exhaust valve seatings are cooled by water.
D. A copper ring is mounted between the cylinder cover and the liner.

注：排气阀阀座由水冷却。

4. Which of the following is NOT true?

- A. The pistons are cooled by oil. B. Four piston rings are fitted to each piston.
C. The scraper ring scrapes the oil downwards. D. The piston cooling is of splash type.

注：活塞冷却是飞溅式（冷却）是错的。

Passage 12 （原题库第 29 篇）

第 1 题 Each of the engine cylinders is provided with a Bosch, type PF, fuel pump. The fuel pump is a s
plunger pump with第 3 题(A) non-adjustable stroke第 2 题 The plunger is so accurately ground and lapped that i
clearance inside the barrel is only 0.002-0.003mm. This provides sufficient tightness between plunger and barrel,
even at pressures as high as 200 ~ 400 bar, without the need for sealing materials. Neither the plunger
can therefore be renewed individually第 3 题(B) \ (C) The plunger pressure stroke is produced by a cam on the engi
camshaft, whereas the return stroke, the suction stroke is effected by means of a strong coil spring. Th
pump barrel is closed by a spring-loaded pressure valve, to which the fuel oil pipe for the respective f
relevant engine cylinder is connected.

Regulation of the amount of fuel delivered by the fuel pump is achieved by turning the pump plunger, the
cylindrical surface of which has a milled recess. The bottom of this recess ends with an edge, which is
to the cylinder generating lines, whereas the top of the recess is limited by a helix. This produces an
edge on the plunger, which also has a narrow longitudinal groove. In the pump barrel are drilled two dia
through which the fuel oil can flow into the fuel pump barrel. The pump barrel is surrounded by a regula
the upper end of which is shaped as a toothed rim. The lower end has two lengthwise slots in which proje
the lower end of the plunger can slide up and down第 4 题 The end of the regulating rod from the engine governor
designed as a toothed rack that engages with the toothed rim on the end of the regulating sleeve. This makes it
possible to turn the pump plunger during engine operation.

1. The fuel pump_____.

- A. is of PF type B. is of reciprocating type C. has an inlet valve and an outlet valve D. A and B are true.

注：燃油泵是 PF 型，往复式。

2. The plunger_____.

- A. is accurately ground and lapped outside the barrel B. has a tiny clearance inside the barrel
C. can be renewed individually when worn out D. An of the above are true

注：柱塞在套筒中的间隙是微小的。

3. Which of the following is true?

- A. The stroke of the plunger can be adjusted B. The outlet valve is spring loaded

C. The plunger down stroke is accomplished by the spring and C are true.

注：出口阀是弹簧加力的，柱塞的下行冲程有弹簧实现。

4. It can be inferred that when moving the rack_____.

A. the sleeve moves up and down

B. the plunger moves up and down

C. the effective stroke of the pump will be changed D. All of the above are true.

注：可以推断出，当移动齿条时，泵的有效行程会改变。

Passage 13 (原题库第 30 篇)

Governing prime movers, particularly diesel engines, require careful consideration. The cyclic variations of a diesel cycle can be passed into the governor drive if it is too "stiff". That is, the cyclic vibrations of the internal gearing etc. inside the governor 第 2 题 To prevent this, some form of damper should be used on the drive into the governor. 第 1 题 (A) The mounting point for the governor should be rigid; a vibration mounting would soon downgrade even the best of governors. Chain or belt drives should be avoided as far as possible as slapping of the belt or chain produces speed variations causing malfunction of the governor. Similarly at the end of the camshaft is subject to torsional vibrations and governors should not be located at that point. They should be located as close as practicable to the fuel pumps, thereby limiting the mass/inertia of operation. In all cases, the governor should be matched to the engine requirements in terms of droop, load limiting, etc. On large engines there is an inertia resistance to acceleration within the masses of reciprocating and rotating elements of the engine, so that during acceleration fuel could be released to the cylinders at a faster rate than combustion can handle. 第 1 题 (B) In an attempt to compensate for this, and to maintain acceptable combustion during acceleration, tapping from the scavenging space may be taken and the pressure used to regulate the rate of fuel released to the engine. This process is incorporated into the governor operating system so that the governor quantity of fuel commensurate with the increase in air pressure in the scavenge space. 第 4 题 (during deceleration the problem is not so great, as excess air can be tolerated far more easily than can the incomplete combustion with insufficient air.)

1. This Passage is mainly about_____.

A. mounting the governors

B. the scavenge pressure limit to the governor

C. A and B

D. how the governor regulates the fuel index

注：这篇文章主要是关于安装调速器以及对调速器的扫气压力控制。

2. The drive to the governor_____.

A. should be rigid B. should use damper C. should use chains or belts D. should be from the end of the cam shaft

注：到调速器的驱动（装置）应该使用减震器。

3. The governor should be mounted close to the fuel pumps_____.

A. for limiting the inertia B. for limiting the load

C. to ensure speed droop D. to cut down the cost

注：调速器安装应靠近燃油泵用于限制惯性效应。

4. It can be inferred that with scavenge pressure limit_____.

A. the engine can be accelerated rapidly B. the engine can be decelerated rapidly

C. the governor will supply fuel oil efficiently D. the combustion will be more complete

注：可以推断出扫气压力控制下，燃烧更完全。

Passage 14 (原题库第 31 篇)

第 2 题 (A) After the shut-off valve of the starting air receiver has been opened, the air flows at full pressure through the filter to the main start valve "A" (with complicated construction) thereby applying pressure to pipe between the main start valve "A" and the starting air control valve. Providing that maneuvering hand wheel is in "Stop" position, all other pipes are without pressure.

第 3 题 (A) If the wheel is turned towards the "Start" position, a pawl above the starting air control valve and the valve is opened, allowing air to flow to the main start valve "A". It opens to allow a direct flow of air to the main start valve "A".

第 3 题 (B) All cylinder starting valves are thus exposed to air pressure and, furthermore, air flows to the cylinders.

distributor, which is controlled by the camshaft. The distributor has a series of slide valves arranged the camshaft-one slide valve for each cylinder. These supply pilot air to the cylinder starting valves w
"Start" position. 第3题(C) The rotation of the engine crankshaft commences, after which the cylinder starting
are opened in the correct sequence. The crankshaft is thus brought to speed of rotation necessary for comp
ignition.

When the maneuvering hand wheel is moved, the governor is actuated through a flexible cable setting the fuel
pumps. However, a fuel index limiting arrangement is inserted, which keeps the regulating shaft and thus the fuel
pumps at zero index during the starting process, ensuring that fuel is not injected into a cylinder during
starting air.

第4题 When the engine crankshaft has reached the necessary speed, the hand wheel is turned further past the
"Start" position with the result that the arm above the starting air control valve is released and the valve
is vented. At the same time, the control piston in the main start valve is vented, thus blocking the supply of air
to the cylinder starting valves, the starting air distributor and the fuel index limiter. Gradually, as the wheel is
turned further towards the maximum position. The governor increases the fuel pump index and the crankshaft rotates
quickly. The governor ensures that the maximum permissible speed is not exceeded.

1. This Passage is about ____.

- A. starting air system and speed regulating system **B. start of the engine**
C. governor D. crankshaft

注：这篇文章主要是关于发动机启动的。

2. If the shut-off valve of the starting air receiver is opened ____.

- A. the cylinder starting valves are subject to pressure** B. pressure air flows to the starting air distributor
C. the starting air control valve is actuated **D. None of the above is true.**

注：如果启动空气瓶的关闭阀被打开，上面说法都不对。（根据第一段划线内容推断）

3. If the hand wheel is positioned "start" ____.

- A. the starting air control valve will be opened
B. individual starting valve on each cylinder will be exposed to pressure
C. there will be cylinder starting valve or valves opened
D. All of the above are true.

注：如果手轮被放在启动位置，启动空气控制阀被打开；每个汽缸上各自的启动（空气）阀经受压力；有汽缸
（空气）气动阀被打开。以上答案都是正确的。

4. During the supply of starting air to the cylinder ____.

- A. air is consumed** B. fuel oil may be supplied to the cylinder or cylinder for reliable starting
C. the control piston in the main start valve "A" is vented **D. All of the above are true.**

注：向汽缸供应启动空气期间，空气被消耗。（句中 vent，意为放气；通风）

Passage 15 （原题库第 32 篇）

第2题 The governor drive is placed on the stem end of the engine and consists of a cylindrical gear wheel
is driven by the gear wheel on the camshaft, plus a set of cam followers. 第1题 The function of the governor is to
control the effective stroke of the fuel pumps, so that the rev/min of the crankshaft is maintained constant within
certain limits, independent of the load.

The action of the governor is transferred through arms and draw rods to a longitudinal regulating shaft. A
2-part arm is provided for each fuel pump. 第3题 The 2-part arm comprises an arm holder and a spring lever which
are connected by a spring, thereby enabling the governor to control the pumps even if one of the pump pistons
The movement is transferred from the spring lever to the toothed rack of the pump through a linkage.

The regulating shaft is also provided with a stop arm which can be moved by the piston rod in a stop cylinder.
It is activated when the engine's overspeed trip comes into operation. The piston rod in the stop cylinder
moves the stop arm, whereby the regulating shaft is turned and the fuel pumps are set in the "Stop" position, thus

engine. The Woodward governor tries to maintain the regulating shaft in the "Running" position, but between the governor and the regulating shaft there is a flexible draw rod that can be compressed and thus allows the shaft to be moved into the "Stop" position.

第4题 If a cylinder is to be set out of action, e.g. when measuring the compression pressure, the stop cylinder is thereby the toothed rack of the relevant fuel pump is moved to the zero position.

1. This Passage is mainly about ____.

A. working of the governor B. the camshaft C. fuel index regulating of the engine D. the fuel pump

注：这篇文章主要是关于发动机油尺调节的。

2. The governor ____.

A. is driven directly by the crankshaft B. is driven with chains by the camshaft

C. is in the middle part D. None of the above is true.

注：调速器不是直接由曲轴驱动，也不是通过凸轮轴由链条驱动，也不在中间部分。

3. If a fuel pump piston seizes ____.

A. the stop cylinder will be activated B. the governor will be damaged

C. the relevant spring will be compressed D. the flexible joint will be compressed

注：假如燃油泵柱塞卡住，相关的弹簧将被压缩。

4. When measuring the compression pressure in the cylinder ____.

A. the engine should be stopped B. the fuel pump should be stopped

C. the toothed rack of the relevant fuel pump should be moved to zero position D. None of the above is true.

注：测量汽缸中压缩压力时，相关燃油泵的齿圈应被移到零位。

Passage 16 (原题库第33篇)

Where routine maintenance is concerned, the governor should be checked regularly for adequate lubrication.

第1题 The operating range is usually quite small, giving a tendency for them to wear over limited areas. Then a sudden and larger change in speed than normal may carry the governor onto a ridge of debris or gummy oil that may stick at that point. To restrict this as far as possible, the governor pivots, slide, etc. should be cleaned and well lubricated whenever possible. **第2题** It should be born in mind that the governor structure is such that, were the spring to fracture in any way, the flyweights would be able to move outwards and shut the fuel rack. **第3题** The connections from the governor to the fuel racks should be designed in such a way that the governor can both increase and decrease the fuel within the bounds of some hand setting. The governor can adjust the fuel settings but cannot release more fuel to the engine than is dictated by some predetermined value set by the operator.

第4题 To overcome the above limitations of the CF governor, "servo governors" have been developed. They use the power of hydraulics to pump the heavier fuel rack systems associated with larger engines into the desired position. This "powered" operation is rapidly and accurately achieved, and the hydraulic flow can be either electrically or mechanically controlled. The speed sensing can be done by a tachometer arrangement that can be set to the desired speed, and on sensing any variation a solenoid-operated flow valve allows pressurized hydraulic flow into a servo system of pistons/plungers which resets the rack positions. Although this system is quite effective, more sophisticated controlled governors are fitted to larger engines. These use the principle of the CF governor, i.e. flyweights act against spring pressure, but instead of the slide working directly onto the fuel racks it simply regulates the hydraulic fluid to servo pistons controlling the rack positions, this system therefore has the proven reliability and sensitivity of the small CF governor and yet develops quite a large governor effort through the hydraulic system.

1. Which of the following is the reason that the governor discussed sticks?

A. The governor is not sensitive normally. B. It is because of wear in normal working range.

C. The change of speed is too small D. All of the above are true.

注：讨论的调速器卡住的原因是：由于在正常工作范围中有磨损。

2. If the spring fractured ____.

- A. the fly weights would fracture too B. the speed would be greatly increased
C. the operator would set the value D. the fuel would be cut off

注：如果弹簧断裂，燃油将被切断。

3. From the first paragraph we know that the fuel index_____.

- A. will exceed the predetermined upper limit on account
B. will exceed the predetermined limit if the load is too high
C. will invariably stop D. None of the above is true.

注：从第一段中我们可以知道，油尺刻度绝不能超过预设上限。

4. The second paragraph is mainly about_____.

- A. hydraulic power B. CF governors
C. advanced governors in stead of CF governor D. electrical or mechanical hydraulic flow

注：第二段主要是关于取代CF 调速器的先进调速器。

Passage 17 (原题库第 34 篇)

第 2 题(A) typical example of a hydraulic governor is the Woodward. This has adjustable droop for parallel operation and it is fitted with a speed-adjusting control. If required it can be fitted with a synchronizing motor to provide remote control from a switchboard.

第 3 题(A) gear pump driven from the engine supplies oil under pressure to accumulator which is a by-pass to regulate maximum pressure. One branch supplies oil to the top of the power piston the pressure always tending to move the terminal shaft to shut off fuel, while the other supplies oil to the pilot valve operated by the linkage from the fly weights above.

Should the speed of the engine decrease due to increased load, the flyweights will move towards their center of rotation and lower the position of the pilot valve plunger admitting oil pressure from the bottom of the power piston. Since, however, the area on the bottom is much greater than the top, the net resultant force causes the piston to move downwards. This operates the power lever turning the terminal shaft which varies the cut-off point in the fuel pump through linkage but as the power piston moves up, the actuating compensating piston moves down. Oil under this piston is now forced through the needle valve to the receiving compensating lever and the pilot valve plunger until it has returned to its normal position. This stops further movement of the terminal shaft so that the fuel control is now set in a position corresponding to the increased fuel required to run the engine at normal speed under the increased load.

1. This Passage is mainly about_____.

- A. what type of governor should be provided when the engine is used for electric power generation
B. why the speed of the engine fluctuates
C. how the governor works D. how the fuel pumps work

注：这篇文章主要是关于调速器是如何工作的。

2. Which of the following is true about the Woodward discussed?

- A. It is a kind of mechanical governor. B. It can not be used for parallel operation.
C. It has speed droop. D. It may only be manually controlled from a switch board.

注：关于讨论的 Woodward，“它有速度降”是正确的。

3. The oil from the gear pump will_____

- A. be supplied to the accumulator B. act on the power piston
C. be supplied to the pilot valve D. All of the above are true.

注：来自齿轮泵的油（液压油）被供到蓄压器；作用到动力活塞上；也被供到导阀。 accumulator 蓄压器； power piston 动力活塞； pilot valve 导阀； 导向阀

4. When the speed of the engine decreases due to increased load, which of the following will NOT happen?

- A. The flyweights move towards their center
B. The pilot valve plunger moves towards its normal position.

C. The power piston moves downwards until it returns to its normal position.

D. The terminal shaft moves to a new position

注：当发动机由于负载增加而转速降低时，不会发生的是：动力活塞向下移动，直到它回到正常位置。

Passage 18 (原题库第 35 篇)

The cylinder liner is of alloy cast iron, its upper flange is on top of the frame and has bore cooling.

第 1 题 It is secured by a forged steel cylinder cover which is also bore cooled and is shaped internally to accommodate most of the combustion space. Cylinder lubricating oil is injected at one level in the liner. The crown is a chrome-molybdenum alloy steel with hard chrome-surfaced ring grooves in which four compression rings are fitted. 第 2 题 In this particular model a protective layer of Inconel is welded to part of the crown surface to prevent high temperature corrosion. The piston is oil cooled, oil being supplied by a telescopic gland to the crankcase through the piston rod. It is returned from the crosshead to a slotted pipe in the crankcase. A short exhaust pipe is added. The crown is bolted to the piston rod at an inner support ring.

Surface hardening reduces wear on the piston rod at the diaphragm gland. The rod is bolted at the top of a cylindrical crosshead which is of large diameter and incorporates a full-length bottom half-bearing shell.

第 3 题 Floating guide shoes are attached at each end.

The crankshaft may be either semi-built up or of welded construction, with large journals and pins. All bearings are of white metal. Main bearings have thick shells, crankpin (bottom end) and crosshead (top end) bearings have thin-wall shells. White metal is used for the guide surfaces. The exhaust valves are operated hydraulically by oil pressure from cam-timed actuated pistons. 第 4 题 They have air compressed springs which allow them to be rotated by vanes. The valve spindles are usually manufactured by the hot isostatic pressure (HIP) method of Nimonic and austenitic steel part construction. Valve housing is cooled at its seat and spindle guide bushing. The exhaust duct is uncooled to avoid low temperature corrosion.

1. Which of the following features is not mentioned about the cylinder cover?

A. Made of forged steel B. Special shaped C. Bore cooled D. Intensively cooled

注：关于气缸盖，强制冷却的特征没有提到。

2. In order to prevent high temperature corrosion on the piston crown, what kind of special measures is taken?

A. Made of chrome-molybdenum alloy steel B. Hard chrome-surfaced
C. Inconel welded D. Surface hardened

注：为防止活塞头高温腐蚀，要采取（铬镍铁）合金焊接的特殊措施。

3. Which one is not bolt-connected?

A. The piston crown and the piston skirt B. The piston crown and the piston rod
C. The piston crown and the crosshead D. The guide shoes and the guide

注：导板滑块和导板不是螺栓连接的。

4. The exhaust valves are rotated by_____.

A. cam B. compressed air C. vanes D. hydraulic oil

注：压缩空气排气阀转动。

Passage 19 (原题库第 36 篇)

第 1 题 In a closed fresh water system, the engine jackets, the heat exchanger and the circulating pumps form a continuous circuit which is open to the atmosphere. The cylinder jacket cooling water after leaving the engine passes to a sea water circulating cooler-heat exchanger and then into the jacket water circulating pumps. It is then pumped around the cylinder jackets, cylinder heads, exhaust valves and to the condenser. 第 2 题 However, provision has to be made for the expansion of the water due to the increase in temperature and due to small amount of air which may enter the system and become entrained and for water make-up due to leakages. These are met by a small head tank which is open to the atmosphere and placed at a higher level than any other point in the system so that changes in volume can be accommodated by changing the level of the free surface of the water in the tank.

第 3 题 The head tank is generally connected into the system at the pump suction, as this minimizes the

chance of air being drawn **into** the system at the **pump**. The minimum height of the head tank may be based on maintaining pressure of fresh water in the heat exchanger above that of the seawater to ensure that in the event of a small internal leak developing seawater cannot enter the fresh water system. Alternatively, it may be based on a minimum pressure to be maintained within the jackets to avoid cavitation effects.

The closed systems usually need vents if steam pockets or airlocks are not to cause trouble. Vent pipes of small-bore tube are lead from any local high point in the system to the top of the head tank for the relief of the cooling water. A heater in the circuit facilitates warming of the engine prior to starting by circulating the cooling water. A heater in the circuit facilitates warming of the engine prior to starting by circulating the cooling water.

第4题 The temperature of the water entering the engine jackets is regulated by a by-pass across the jacket water cooler. The proportions of water passing through the cooler, or bypassing it are controlled by a valve. The temperature is usually adjusted to maintain a constant outlet water temperature from the engine jackets of the load or speed or the temperature of the seawater.

The piston cooling system may be an open system which employs similar components with a closed system, except that a drain tank is used in stead of a head tank and the vents are then led to a hopper or tundish at a high point in the machinery space. The hopper serves as a visual flow indicator. A separate piston cooling system is fitted to limit any contamination from piston cooling glands to the piston cooling system only.

1. The loop of the jacket cooling water is _____.

- A. engine → heat exchanger → circulating pump → engine
- B. heat exchanger → engine → circulating pump → heat exchanger
- C. circulating pump → heat exchanger → engine → circulating pump
- D. circulating pump → engine → heat exchanger → circulating pump

注：缸套冷却水的回路是：发动机—热交换器—循环泵—发动机。

2. A small head tank is provided in the closed jacket cooling water system for

- A. water expansion B. water make-up C. warming of the engine D. A + B

注：闭式缸套冷却水系统中，小型高置水箱提供用于：水膨胀；水补偿。

3. The head tank is connected to the closed circuit at

- A. engine inlet B. pumps inlet C. heat exchanger inlet D. engine outlet

注：高置水箱在泵入口处被连到闭合回路。

4. The jacket water temperature is regulated to maintain a constant temperature of

- A. engine inlet B. pumps inlet C. heat exchanger inlet D. engine outlet

注：缸套水温度被调节是为了维持发动机出口温度恒定。

Passage 20 (原题库第38篇)

During normal operation on heavy oil at sea, the oil is taken from the H/O tanks, where it is stored, through a heater and next through a centrifuge for purification, then pass through a cooler, before being discharged to the steam-heated heavy oil service tanks. Two of these are usually fitted and they are used alternately. **第1题** (A) One tank is in use, while the other is being cleaned. **第3题** (C) These tanks are heated to a moderate temperature and self-closing drain valves are fitted to remove any water or sludge which may settle out. **第4题** (C) The oil is drawn from the service tank in use by pumps and discharged at low pressure (to the oil heater). These pumps should be in duplicate. A relief valve on the pumps will return excess pressure to the system. A viscosity regulator is fitted at the heater discharge, through which the oil will pass. This automatically controls the flow of the oil fuel leaving the heater to maintain its viscosity within close limits. A by-pass must be fitted with a viscosity regulator. The oil is then discharged through a fine strainer to the main engine fuel pump suction. A pressure control valve is fitted in the system and excess oil returned either to the heavy oil service tanks or to a balancing tank.

第4题 (D) A diesel fuel tank is included in the system with its discharge to the primary pump suction through a change-over valve. By operating this valve the engine may be operated on diesel fuel. **第2题** Change-over should be made very gradual to allow temperatures in the system to stabilize. During this period, the excess oil will return to the heavy oil service tanks or a balancing tank. After it has been pumped from the D/O tanks, where it is stored.

oil passes through a centrifuge for purification before entering the diesel oil tank.

1. The word "these" probably means ____.

A. HO tanks B. a heater and a centrifuge C. a heater and cooler D. heavy oil service tanks

注：“these”这个单词可能意思是这些重油日用柜。

2. How is change over from heavy oil to diesel oil carried out?

A. Step by step B. Hand over hand C. Step for step D. Quickly

注：重油到柴油的转换应逐步地进行。Step by step(逐步地)等同于 gradual

3. Where are self-closing drain valves fitted?

A. HO tanks B. Heavy oil service tank C. Balancing tank D. Centrifuge

注：自闭式放残阀被安装在重油日用柜上。

4. Which of the following statements is true according to this Passage?

A. Two heavy oil service tanks are used meanwhile.

B. "Heater" mentioned in this passage is only used to heat heavy oil.

C. Two pumps are fitted, which draw oil from the service tank in use.

D. Diesel oil passes to the primary pump, and then through a change-over valve.

注：两台泵被安装，从在使用的日用柜中抽油。

Passage 21 (原题库第 39 篇)

The diesel engine is a form of internal combustion engine similar to that used in a bus. Its power is measured in brake horsepower (bhp). This is the power put out by the engine. Effective horsepower is the power developed by the piston in the cylinder, but some of this is lost by friction within the engine. The power output of a modern marine diesel engine is about 40,000 brake horsepower. This is now expressed in kilowatts. By comparison the engine of a small family car has an output of about 80 bhp. Large diesel engines, which have cylinders nearly 3 ft in diameter, turn at the relatively slow speed of about 118 rpm. These are known as slow-speed diesel engines. They can be connected directly to the propeller without gearing. 第2题(A) Although higher power could be produced by higher revolutions, this would reduce the efficiency of the propeller, because a propeller is more efficient the slower it turns. 第1题 These large slow running engines are used in the larger merchant ships, particularly tankers and bulk carriers. 第3题 The main reason is their low fuel consumption. More and more of the large merchant vessels are being powered by medium-speed diesel engines. 第1题 These operate between 150 and 450 rpm, therefore they are connected to the propeller by gearing. This type of engine was once restricted to smaller ships, but now they are used in fast cargo liners as well as in tankers and bulk carriers. 第1题 They are cheaper than slow-speed diesel engines, and their smaller size and weight can result in a smaller, cheaper ship.

1. Why do larger merchant vessels use slow-speed diesel engines?

A. Because they turn at about 118 rpm.

B. Because their propellers are more efficient.

C. Because they can be connected directly to the propeller without gearing.

D. Because they are fuel-saving.

注：较大型的商船使用低速柴油机的原因：因为它们是省油的。

2. According to the author's standpoint, what does the efficiency of slow-speed diesel engine propellers depend on?

A. Propeller power B. Both propeller size and revolutions

C. Propeller size D. Propeller revolutions

注：依据作者的观点，低速柴油机螺旋桨的效率取决于：螺旋桨尺寸和转速。

3. Why do medium-speed diesel engines have gearing?

A. In view of propeller efficiency B. In view of engine revolution

C. In view of fuel consumption D. In view of merchant ship size

注：中速柴油机有传动装置的原因：考虑到螺旋桨效率。

4. What is probably the main reason why medium-speed diesel engines were once restricted to smaller cargo ships?

- A. They are cheaper than slow-speed diesel engines.
B. The fuel consumption of the medium speed engine is more than that of the slow speed engine.
C. They operate between 150 and 450 rpm.
D. Smaller cargo ships require more efficient propellers.
- 注：中速柴油机曾经局限于较小货船，主要原因可能是：中速柴油机的燃油消耗比低速柴油机的燃油消耗多。
(通过文章当中【】标注的内容，利用排除法，可得出答案。)

Passage 22 (原题库第 40 篇)

第 1 题 In one type of large bore MC engines with high cylinder numbers, we have experienced longitudinal vibrations of exhaust receiver of a magnitude that caused local overstressing around the fixed supports.
第 2 题 Measurements revealed that the vibrations were caused by gas pulsation inside the receiver at a frequency which, at certain engine speeds, coincided with the natural frequency of the mechanical vibrations of the receiver.
第 3 题 The problems were solved by redesigning the receiver and its supports, so as to change the natural frequency.
第 4 题 The fixed support for the exhaust receiver was modified from our single spring plate type to a double spring plate type. The double spring plate type reduces the local deformation of the receiver and because of the greater rigidity, also the natural frequency of the support is increased.

1. The MC engine _____.
A. is a new type of diesel engine discovered and used on board not long ago
B. is a new type of diesel engine designed on the basis of MAN and B&W engine
C. came to use before the MAN and B&W engine
D. has no advantages over the MAN and B&W engine
- 注：MC 发动机是根据 MAN and B&W 型发动机设计的一种新式柴油机。
2. The vibration caused by _____.
A. the natural frequency of the fixed support at the different engine speeds
C. the gas pulsating within the receiver
D. the gas exhausting inside the receiver
- 注：震动是由排气管中气体脉动造成的。
3. The aim at redesigning the receiver and its supports is to _____.
A. keep the frequency down
B. convert the natural frequency
C. reduce the mechanical vibration on exhaust much gas
注：重新设计排气管及其支架的目的是：转换固有频率。
4. The fixed support of the receiver of double spring plate type is _____.
A. modified from that of the receiver of single spring plate type
B. to reduce the local deformation of the receiver
C. to produce less natural frequency of the support
D. both A and B

注：双弹簧板式排气总管的固定支架是由单弹簧板式的排气总管的固定支架修改成的；用来减少排气总管的局部变形。

Passage 23 (原题库第 41 篇)

第 1 题 Instrument air must be clean and dry. Air leaving a compressor is 100% humid and has some free moisture present; the free moisture is easily removed by ceramic drier. 第 2 题 (A) An absorbent type drier is also required to give the desired dryness factor.
第 3 题 The source of the air can be from the main air reservoirs after reducing the air pressure to the pressure required by the system. 第 4 题 In this case it is likely that the dew point of the air will be such that an absorbent drier will not be needed and a ceramic filter will suffice.

1. The "instrument air" probably means _____.
A. an instrument consisting of air
B. humid air
C. dry air
D. control air
- 注："instrument air" (仪表气源) 可能意思是控制空气。

2. A more effective method of removing moisture is_____.

A. filtering B. absorbing C. heating D. cooling

注：去除空气的一种更为有效的方法是吸收。

3. The first sentence in the second paragraph tells us that the instrument air pressure is_____.

A. 7bar B. 8bar C. 15bar D. 7 bar or 8 bar

注：第二段第一句告诉我们仪表气源的压力是7巴或8巴。

4. When will a ceramic filter suffice?

A. When there is an absorbent drier. B. When there is not an absorbent drier.

C. When dew point of the air becomes higher. D. When the dew point of the air becomes lower.

注：当空气的露点变得更高时，一个陶瓷滤器就足够了。

Passage 24 (原题库第 42 篇)

第 4 题 Sufficient potable water may be taken on in port to meet crew and passenger requirements but the quality of this water will be too poor for use in water tube boilers and will require further treatment by distillation.

第 2 题 It is common practice to take on a minimal supply of potable water and make up the rest by distillation of sea water. Even in vessels which carry sufficient potable water for normal requirements it is a statutory requirement that such ships, when ocean-going, should carry distillation plant for emergency use.

The main object of distillation is to produce water essentially free of salts. Potable water should contain less than 500mg/litre of suspended solids. 第 3 题 Good quality boiler feed water will contain less than 2.5mg/litre.

1. The potable water means_____.

A. waste water B. that the quality is too poor to drink

C. the feed water for boilers D. drinking water

注：potable water 意思是 drinking water 饮用水

2. In common practice, when ocean-going every time, ships should take on_____.

A. sufficient potable water B. minimal quantity potable water C. at least a distillation plant D. sufficient sea water

注：一般，每次远洋航行时，船舶应至少装载最少量的饮用水。

3. Suspended solids of the boiler feed water will be_____.

A. less than 500mg/litre B. more than 500mg/litre C. less than 2.5mg/litre D. more than 2.5mg/litre

注：锅炉给水的悬浮固体，每升要少于2.5毫克。

4. Which of the following statements is not true?

A. Potable water used as feed should be treated to meet boilers.

B. The distillation plant can generate the fresh water.

C. The quality of potable water is better than distilled water.

D. A partial drink water can be made up by distillation of sea water.

注：饮用水的品质比蒸馏水好，是不对的。

Passage 25 (原题库第 43 篇)

第 1 题 (B) By bringing the water to its boiling point and drawing off the vapour the salts and other solids are left behind in the liquid, a proportion of which is discarded. The vapour produced is essentially solids-free although some solids are carried over, especially if the equipment is misused.

The equipment in which this process takes place is known as an evaporator of which there are two distinct types. One type boils the water at the saturation temperature corresponding to the pressure in the evaporator and is called a boiling evaporator. 第 3 题 The other type heats the water in one compartment before it is released into a second compartment in which the pressure is substantially lower, causing some of the water to "flash" into steam. This type is known as a flash evaporator. 第 2 题 Thus in a boiling evaporator the water is maintained continuously at its saturation temperature—in other words latent heat is added—while in the flash evaporator it is sensibly cooled before steam is supplied.

1. The word "which" in line 2 in paragraph 1 means_____.

A. vapour B. salts C. solids D. liquid

注：第一段第2行，单词"which"意思是liquid 液体。

2. The vapourizing pressure in a boiling evaporator is_____.

A. essential constant B. dramatically various C. substantially lower D. substantially higher

注：在沸腾式造水机中，蒸发压力基本是恒定的。

3. The vapouring pressure in a flash evaporator is_____.

A. essentially constant B. dramatically various C. substantially lower D. substantially higher

注：闪发式造水机中蒸发压力相当低。

4. The word "which" in line 4 in paragraph 2 means_____.

A. heat B. Water C. the first compartment D. the second compartment

注：在第二段第4行中单词"which"的意思是the second compartment 第2级。

Passage 26 (原题库第44篇)

第1题 Basically, these units incorporate an evaporating section beneath a condensing or distilling section in a common vessel of appropriate shape. A controlled flow of filtered feed, taken preferably from a salt circuit, enters the evaporating section and ascends through a battery of vertical tubes, surrounded by steam or hot water, vaporizing as it goes, to a condensing section through a 第3题 labyrinth or screen (generally called a demister) which ensures that no droplets of salt water enter the condenser with the vapour. The vapour, directed by suitably placed baffles, passes over the condenser tubes and falls as water to an outlet duct, from which it is run to a distillate pump, and a salinometer.

1. The main idea of this Passage described_____.

A. a boiler B. a fresh water generator C. a refrigerator D. a atmosphere condensing system

注：这篇文章主要思想描述的是造水机。

2. Which of the following parts is not mentioned?

A. Evaporator B. Condenser C. Circulating pump D. Salinometer 注：循环泵没有提到。

3. The function of a labyrinth or screen_____.

A. directs the vapour flow B. prevents the droplets through

C. transfer the heat to the feed D. measures the salinity of distillate water

注：曲折或屏障的作用：防止液滴经过。

4. We can infer that_____.

A. the feed passes around the tubes B. the hot water passes around the tubes

C. the feed flows beneath the hot water D. the vertical tubes are heated by the battery

注：我们可以推断出：热水在管子周围通过。

Passage 27 (原题库第45篇)

The heating medium may be live steam or preferably, and more commonly, exhaust or bled steam or **again**, in motor ships, hot fresh water, taken from the cooling main between the engine and the f. w. coolers. The may be circulated by salt water or, depending upon the heat recovery attainable in the boiler feed system, by auxiliary condensate. Sub-atmospheric pressure is produced in the units by water-operated ejectors; the brine density in the evaporating section is maintained at 0.062g/ml.

1. Which of the following heating mediums is not mentioned?

A. Live steam B. Exhaust gas C. Bled steam D. Cooling water for main engine

注：(从第1句推断出) 没有提到的加热介质是废气。

2. The underline sentence "the distilling unit may ..." means that_____.

A. the vapour is cooled by salt water B. the salt water vapourizes in the distilling unit

C. the salt water is feed water D. the salt water is condensate

注：下面划线的句子"the distilling unit"意思是："蒸汽被海水冷却。"

3. The phrase "sub-atmospheric pressure" in line 4 probably means_____.

A. the primary air B. the secondary air C. vacuum pressure D. absolute pressure

注：第4行中短语"sub-atmospheric pressure"意为：真空压力。"sub-atmospheric pressure"低于大气压，真空度。

4. Which of the following materials is not mentioned to make the evaporator-distiller shell?

A. Cupro-nickel B. Non-corrodible material C. Mild steel D. Aluminum brass

注：制造造水机的管壳，没有被提到的材料是：铝黄铜。

Passage 28 (原题库第46篇)

After ensuring that the "nip" is correct the beating clearance should be checked. The beating cup and its associated half shells are removed leaving the other half in place. Two pieces of pure lead wire are placed across the journal at positions one-third and two-thirds along its length. The cap and shell are replaced and tightened up until the "nip" is zero. The cap and shell are then removed and the thickness of the lead wire is measured by a micrometer. It is important to use only pure lead, which is very soft, and to choose a thickness which is greater than the normal allowable clearances but not greater than twice this amount. The clearance is within the manufacture's limits. As a guide these will be approximately 0.1 to 0.2 mm for white metal bearings and approximately 0.25 to 0.4 mm for copper-lead or tin-aluminum bearings with crankshaft journal diameters in the range from about 200 to 400 mm.

1. The lead wire should be put on the upper surface of the journal ____.

A. longitudinally B. vertically C. transversely D. angularity

注：铅丝应被横向放在轴颈的上表面。

2. Which of the following statements is true?

A. The cap and shell begin to be tightened when the "nip" is zero.

B. The cap and shell are to be tightened until the "nip" is zero.

C. The cap and shell are not to be tightened until the "nip" is zero.

D. The cap and shell haven't been tightened when the "nip" is zero.

注：在过盈间隙为零之前，轴承盖和轴瓦要被更换并上紧。

3. According to Passage, the thickness of the lead wire should be measured ____.

A. before the cap and shell are removed

B. when the cap and shell are being removed

C. after the cap and shell have been removed second time D. until the cap and shell are removed

注：根据文章来看，铅丝的厚度应在轴承盖和轴瓦第二次被拆除之后测量。

4. According to the Passage, the clearance for white metal bearing should be ____.

A. less than 0.1 mm B. larger than 0.2 mm C. within about 0.25 to 0.4 mm D. in the range from about 0.1 to 0.2 mm

注：根据文章来看，白合金轴承的间隙应是在大约0.1毫米到0.2毫米的范围内。

Passage 29 (原题库第47篇)

All bearings of the driving gear, the thrust bearing, the camshaft bearing and the bearing of the governor are connected with a pressure oil system, known as the forced system by which an oil film is maintained on the surfaces. Since it is essential to form and maintain an oil film on the surface, lube oil must be appropriate which should be thick enough to hold the film together while, on the other hand, which should allow the oil to flow easily. Oil is drawn from a sump, usually located on the bedplate of the engine, by an electric oil pump or by a lubricating oil pump connected to the engine, and delivered through filters and oil cooler to the bearings. As the pressure in the driving gear is acting in a downward action, a special pressure lube oil is provided for the cross-head bearings. After feeding all the bearings, the oil drops into the crankcase and drains away the sump for re-circulation.

1. According to the Passage, an oil film is maintained ____.

A. in the bearings

B. by the governor driver

C. by a lubricating oil pump

D. by a pressure oil system

注：根据文章来看，油膜依靠压力油系统维持。

2. Which of the statements is true?

- A. Oil is drawn to a sump by an electrically-driven oil pump connected to the engine.
 B. Oil is drawn to a sump either by an electrically-driven pump or by a lubricating oil pump connected to the engine.
 C. Oil is drawn from a sump either by an electrically-driven oil pump or by a lubricating oil pump connected to the engine.
 D. Oil is drawn from a sump by an electrically-driven oil pump and a lubricating oil pump connected to the engine.
- 注：润滑油从油底壳中抽吸，要么依靠电动油泵，要么依靠被连到发动机的润滑油泵。
3. A special pressure lubrication is provided for the cross-head bearings_____.
 A. because the pressure in the driving gear is in the upward action
 B. for the pressure in the driving gear is acting in a downward action
 C. as the pressure in the driving gear is not high enough
 D. as the pressure in the driving gear is sometimes acting in a downward action
- 注：一种特殊的压力润滑（系统）被提供用于十字头轴承，用于驱动机构中压力向下作用时。
4. The word "feeding" in the last sentence means_____.
 A. eating B. supplying C. taking D. bringing
- 注：最后句子中单词"feeding"意思是 supplying 供应；供给

Passage 30 （原题库第 48 篇）

An automatic system usually consists of a control system and an information system. A control system which measures the condition of some entity and, with the information, governs the state of a variable; temperature, pressure, position etc. **第 1、2 题** The open-loop system is the simplest form a control system may assume. It is distinguished from the closed-loop system by the lack of an input which measures the state of the controlled variables; such an input is called a feedback. In modern ships the open-loop system has practically disappeared and the closed-loop system which operates with a feedback is extensively used.

An information system serves the parallel function of monitoring system or plant performance. **第 3 题** The monitoring function may serve a number of purposes; specifically, it may indicate values of controlled variables so that the operator can take corrective action, warn of off-limit conditions and provide record of performance. In many cases a visual and audible alarm may be provided to warn of off-limit conditions on board ship and, associated with important variables will be recorded on demand.

The automatic control system can be more sophisticated by incorporating digital-processing equipment, computer. This computer is usually fed with signals from all sensors. It scans the values of the sensors alarm signals for off-limit conditions, acting as a super-supervisor. Sometimes, it can even make necessary the necessary action to optimize performance without human intervention.

1. The closed-loop system differs from the open-loop system by_____.
 A. the lack of a feedback B. the presence of a feedback C. the lack of a computer D. the presence of a computer
- 注：闭环系统不同于开环系统，因为它存在反馈。
2. A feedback is an input_____.
 A. which governs the state of a variable
 B. which provides a visual and audible alarm
 C. which indicates values of controlled variables
 D. which measures the state of the controlled variable
- 注：反馈是测量被控（变）量状态的一种输入。
3. The monitoring function may serve all of the following purposes except_____.
 A. instigating corrective action B. indicating values of controlled variables
 C. warning of off-limit conditions D. providing record of performance
- 注：监控作用可以起到的作用不包括：使发生纠正动作。
4. The word "off-limit" in the Passage may mean_____.
 A. off-set B. off-state C. within limits D. beyond the limit

注：文章中 "off-limit" 单词的意思是：超出限制；脱离限制。

Passage 31 (原题库第 49 篇)

A large fraction of the heat input to the main engine and auxiliary engines is wasted as a latent heat in the exhaust gases. Smaller but significant fractions are lost via cooling of the jacket water, lube oil, and inlet air.第 1 题 For example, the fractions of heat input of a two-stroke main engine might be 35 % to exhaust gases, 15% to jacket water, 5% to lube oil and 5% to all kinds of coolers.

第 2 题 The diesel engine exhaust gas temperature is at least 600 oF at full load, so it is feasible to extract part of its heat. 第 3 题 With the installation of the turbochargers on main engines, much waste heat in the exhaust has been used to drive the turbochargers, which increase the inlet density, resulting in a great increase of engine output. The exhaust gases from the turbochargers are still at a high temperature, and it is possible to make further use of the high temperature gases to produce usable steam. 第 4 题 For this purpose, exhaust gas boilers have been widely used and waste heat systems have been formed on board.

1. According to the Passage, about_____ of the total heat input of a two-stroke main engine is discharged to the exhaust gases.

- A. one quarter B. one-third C. half D. two-thirds

注：根据文章来看，2 冲程主机输入总热量的大约 3 分之 1 被排到废气中。

2. According to the Passages, the diesel engine exhaust gas temperature is at least_____ at full load.

- A. 600 oC B. 400 oC C. 315 oC D. 200 oC

注：根据文章来看，全负荷状态下柴油机废气温度至少为 315℃。（600 ℉ = 315 ℃）

3. With the installation of the turbocharger on main engine, a great increase of engine output results from_____.

- A. decreased exhaust gas temperature B. increased inlet air density
C. increased exhaust gas temperature D. decreased inlet air density

注：在主机上安装涡轮增压器的情况下，发动机输出功率的增大是由进气密度增大引起的。

4. In the next paragraph of the Passage, which of the following statements may probably be described?

- A. An auxiliary boiler B. A fresh water generator
C. An waste heat boiler D. A turbocharger

注：这篇文章的下一段，可能描述的是废热锅炉。

Passage 32 (原题库第 50 篇)

Current regulations with respect to the discharge of oily water set limits of concentration 15 parts per million.

第 2 题 A monitor is required to measure these values and provide both continuous records and an alarm where the permitted level is exceeded.

第 3 题 The principle used is that of ultra-violet fluorescence. This is the emission of light by a molecule that has absorbed light. During the short interval between absorption and emission, energy is lost and light of a longer wavelength is emitted. Oil fluoresces more readily than water and this provides the means for its detection.

第 4 题 A sample is drawn off from the overboard discharge and passes through a sample cell. An ultra-violet light is directed at the sample and the fluorescence is monitored by a photoelectric cell. Where an excessive level of contamination is detected an alarm is sounded and diverting valves are operated. The discharging liquid is then passed to a slop tank.

1. The Passage is mainly about_____.

- A. oil pollution B. current regulations related to oil pollution
C. oil in water monitor D. the principle of ultra-violet fluorescence

注：这篇文章主要是关于油分浓度检测器的。

2. A monitor can obtain all of the following functions except_____.

- A. measuring oil content values B. providing continuous records
C. lowering the oil content below 15 p. p. m
D. providing an alarm unit warning of levels of discharge in excess of 15 p. p. m

注：检测器可以获得除了降低含油量使其低于15ppm 的所有作用。

3. From the Passage, we can learn that the ultra-violet fluorescence is a kind of_____.

A. oil sample B. light C. photoelectric cell D. alarm unit

注：从文章中我们可以学到，紫外线荧光是一种光。ultra-violet fluorescence 紫外线荧光

4. A sample is drawn off from_____ and passes through a sample cell.

A. bilge water B. discharge of oil separator C. slop tank D. discharge of oily water separator

注：样品从油水分离器的排出物中抽吸，并流经样品管。

Passage 33 (原题库第 51 篇)

The basic principle behind the operation of this very commonly used instrument is the fact that pure water has a very high electrical resistance and therefore a very low conductivity, to the extent that absolutely pure water can be considered as non-conductive. If sea water is added to pure water, the resistance to the Passage of an electric current fails, i.e. the conductivity increases. 第1题 This instrument measures the conductivity of water such as in boiler feed water system by passing a sample through a small cell containing two platinum electrodes and measuring the current flow that occurs due to the conductance effect of any salts present. Readings are based on the assumption that the conductivity is due to sodium chloride (NaCl) or CaCl₂ as the case may be, but other salts such as magnesium chloride and calcium chloride will almost certainly be present. 第4题 It is assumed for convenience that all conductivity is due to sodium chloride and although this is not strictly accurate it is sufficient for practical purposes.

1. This very commonly used instrument is most probably a_____.

A. flow-meter B. viscometer C. Salinometer D. densimeter

注：这种普遍使用的仪表最有可能是盐度计。

2. Reading measured by this instrument are based on the assumption that_____.

A. all conductivity is due to magnesium chloride

B. all conductivity is due to calcium chloride

C. all conductivity is due to magnesium chloride and calcium chloride

D. other salts such as magnesium chloride and calcium chloride are not present

注：通过这种仪表测量读数是以这种假设为基础的，即假设其他盐类例如氯化镁和氯化钙是不存在的。

3. This instrument indicates the readings by means of_____.

A. measuring the current flow B. measuring the salt content

C. measuring the electrical resistance D. measuring NaCl or CaCl₂

注：借助于测量电流，这种仪表指示读数。

4. Which of the following statements is NOT true?

A. Absolutely pure water can be considered as non-conductive.

B. Magnesium chloride and calcium chloride will almost certainly be present in water such as in boiler feed water.

C. In fact, all conductivity is due to sodium chloride in water.

D. The assumption that all conductivity is due to NaCl is sufficiently accurate for practical purposes.

注：事实上，所有的传导性（导电性）都是由于水中的氯化钠的说法是不正确的。

Passage 34 (原题库第 52 篇)

The field current supply in older machines comes from a lower voltage direct current generator or exciter on the same shaft as the alternator. Modern 第1题 machines however are either statically excited or of the high-speed brush-less type. The exciter is required to operate to counter the effects of power factor 第2题 the a given load. Power factor is a measure of the phase difference between voltage and current and is expressed as the cosine of the phase angle. With a purely resistance load the voltage and the current are in phase, giving a power factor of one. Inductive or capacitive loads, combined with resistance loads, produce lagging or leading power factors which have a value less than one. The power consumed is therefore the product of current, voltage and power factor. The alternating current generator supplying

voltage drop resulting from the load. When the load has a lagging power factor this voltage drop is considerable. Therefore the exciter, in maintaining the alternator voltage, must vary with load current and also the speed change of the prime mover must also be taken into account.

1. The word "machines" in the Passage refers to_____.

- A. the direct current generator B. the alternating current generator
C. the exciter D. the prime mover

注：文章中单词"machines"指的是 the alternating current generator 交流发电机。

2. Which of the following statements is true according to the Passage?

- A. With a purely resistance load, the power factor is zero.
B. Inductive loads combined with resistance loads produces leading power factors.
C. Capacitive loads combined with resistance loads produces lagging power factors.
D. With a purely resistance load, the phase angle is zero.

注：根据文章来看，纯电阻负载，相位角是零的说法是正确的。

3. When the load has a lagging power factor this voltage drop is considerable. This sentence means that_____.

- A. with a purely resistance load, the voltage drops too much
B. there is a considerable voltage drop in the capacitive load combined with resistance load
C. when the load is the capacitive load combined with resistance load, the voltage drops to zero
D. when the load is the inductive load combined with resistance load, the voltage drop is fairly large

注：当负载有滞后的功率因数时，电压降相当大。这句话意思是当负载是电感性负载与电阻性负载组合时，电压降相当大。

4. The exciter must vary with: (1) load current, (2) the power factor, (3) speed change of the prime mover.

- A. only (1) B. only (2) C. (1) and (2) D. (1), (2), and (3)

注：励磁机必须随负载电流、功率因数、原动机速度变化的变化而改变。

Passage 35 (原题库第 54 篇)

第 4 题(B) The windlass is the usual anchor-handling device where one machine may be used to handle both anchors. 第 4 题(A) A more recent development, particular on larger vessels, is the split windlass where one machine is used for each anchor.

第 1 题 The rotating units of a split windlass consist of a cable lifter with shaped snugs to grip the mooring drum for paying out or letting go of mooring wires and a warp end for lashing. 第 2 题 Each of these units may be separately engaged or disengaged by means of a dog clutch, although the warp end is often connected with mooring drum. 第 2 题(A) spur gear assembly transmits the motor drive to the shaft where the various dog clutches enable the power take-off. Separate band brakes are fitted to hold the cable lifter drum when the power is switched off.

The cable lifter unit is mounted so as to raise and lower the cable from the spurling pipe, which is the chain or cable locker.

第 4 题(C) Anchor capstans are used in some installations where the cable lifter rotates about a vertical axis.

第 4 题(D) Only the cable lifter unit is located on deck, the driving machinery being on the deck below.

1. According to the Passage, the rotating units of a split windlass don't include_____.

- A. a cable lifter B. a mooring drum C. a chain locker D. a warp end

注：根据文章来看，分离式锚机的旋转部件不包括：锚链舱。

2. The word "assembly" in the sentence "A spur gear assembly transmits the motor drive to the shaft where dog clutches enable the power take-off" has the same meaning as_____.

- A. unit B. shaft C. dog clutch D. spurling pipe

注：句子中"assembly"单词与 "unit(装置)"意思相同。

3. One of the functions of a dog clutch is_____.

- A. to transmit the motor drive to the shaft

B. to hold the cable lifter and the mooring drum when the power is switched off

C. to engage or disengage the rotating units of a split windlass separately

D. to handle both anchors

注：牙嵌离合器的作用之一 是：使分离式锚机的旋转部件单独地啮合或脱开。

4. Which of the following statements is correct?

A. A more recently development, particularly on larger vessels, is the split windlass where one machine is used to handle both anchors.

B. The word "machine" in the Passage refers to the windlass.

C. Anchor capstans are used in some installation where the cable lifter rotates about a horizontal axis.

D. Both the cable lifter unit and the driving machinery in the anchor capstans are located on deck.

注：文章中单词"machine" 指的是锚机。

Passage 36 （原题库第 55 篇）

Development in lamps and fittings over the past twenty years has solved many problems such as energy consumption, ambient temperatures, shock and vibration effects. Light sources are now available for mounting in the restricted spaces between ceiling and deck.

The technique of providing the correct kind of illumination and degree of brightness, particularly in passenger ships is a matter for 第 4 题 lighting specialists. Suffice it to say that in a passenger ship each of the public spaces, e.g. lounges, dining rooms, bars, cabins, etc., will require different treatment.

第 1 题 Nevertheless crew accommodation in cargo ships including tankers, tends to reach a higher standard of comfort and also deserves specialist attention.

第 2 题 The importance of adequate and effective lighting in machinery spaces needs no emphasis. Machinery rooms are usually of great height and obstructed by gangways, piping and other interference. Narrow beam light sources, e.g. 250w fluorescent-reflector lamps in firings with integral control gear, are desirable.

A suitably constructed fitting requires practically no maintenance being independent of atmospheric pollution. Local lighting of gauges, switchboards, etc. requires higher illumination levels. Fitting with fiberglass bodies reduce maintenance, i.e. no painting or rust problems.

In boiler rooms heat problems must be taken into account in order to maintain the correct lumen output. For the shaft funnel fluorescent diffusing fittings are most suitable.

第 3 题 Fluorescent lamps are unsuitable for refrigerated spaces unless the temperature is high than -5 oC. At lower temperature starting can be slow and light output poor. A suitable light source is the mercury fluorescent lamp which operate down to -50 oC.

1. According to the second paragraph, which of the following statement is NOT true?

A. It is important for lighting specialists to pay more attention to the lighting in a passenger ship.

B. Each of the public spaces will require different treatment in a passenger ship.

C. Crew accommodation in cargo ships except tankers tends to reach a higher standard of comfort.

D. The lighting problems in cargo ships also draw lighting specialists' attentions.

注：根据第二段来看，除了油船以外的货船中船员居住区往往要达到一个更高的舒适标准的说法是不正确的。

2. According to the third paragraph, which of the following statement is true?

A. Lighting in machinery space is of very importance.

B. Machinery spaces are usually very narrow.

C. Only 250w fluorescent-reflector lamps can be used in machinery spaces.

D. Narrow beam light sources are usually obstructed by gangways, piping and other interference.

注：根据第二段来看，机舱中的照明是非常重要的。

3. According to the last three paragraphs, which of the following statement is NOT true?

A. Fittings with fiberglass bodies need no painting.

B. Fluorescent diffusing fittings are most suitable for the shaft funnel.

C. Mercury fluorescent lamps are suitable for refrigerated spaces.

D. Fluorescent lamps are unsuitable for refrigerated spaces whose temperature is higher than -5°C .

注：根据最后三段来看，荧光灯不适合用于温度高于 -5°C 的制冷空间的说法是不正确的。

4. Lighting specialists are those who_____.

A. light the lamps quickly

B. are the masters of the ships

C. are the chief engineers of the ships have special interests or skills in lamps and fittings

注：照明专家是那些在灯具及配件方面有特殊爱好或技能的人。

Passage 37 (原题库第 56 篇)

第 1 题 (D) discovered mere one hundred sixty years ago and manufactured commercially just half that long,
aluminum today ranks behind only iron and steel among metals serving mankind. The key to its popularity is its
incredible versatility. The metal that makes kitchen foil serves as armor for battlefield tanks. The material
lawn chairs and baseball bats also forms the vital parts of air and space vehicles, their skeletons, their skins,
even the rivet that bind them together.

Behind aluminum's versatility lie properties so diverse that they almost seem to belong to several
For example, in its pure form, aluminum is soft enough. 第 2 题 Yet its alloys can possess the strength of steel
with only a third of its weight. Thus, when Alexander Calder, designed one of his hanging mobiles, 15 feet
long—his choice of aluminum over steel cut two tons from it. 第 3 题 Aluminum also assures the masterpiece
virtual immortality. The instant the metal is exposed to air, its 第 4 题 transparent film seals the
interior against further corrosion.

1. It can be inferred from the Passage that aluminum has been marketed for how many years?

注：A. 40 B. 60 C. 80 D. 160 从文中可以推断出，铝已经交易了 80 年。

2. It can be inferred that a steel object weighing three tons would weigh how many tons if it were made

A. One B. Three C. Six D. Nine

注：可以推断出，重 3 吨的钢质物体，如果由铝制造，重 1 吨 (a third of its weight, 重量的 3 分之 1)

3. It can be inferred from the Passage that things made of aluminum_____.

A. are usually sealed with plastic B. are not very popular as art objects

C. will last a long time

D. should not be exposed to air for a long period of time

注：从文中可以推断出，由铝制造的东西可以维持很长时间。

4. A transparent film is a film_____.

A. which can be seen clearly B. which is very thin enough to be seen through

C. which is very interesting D. which is very dim

注：透明的薄膜（薄层）是可以看透的一层非常薄的薄膜。(see through 看透，识破；transparent 透明的；)

Passage 38 (原题库第 57 篇)

第 2 题 Almost every type of electrical apparatus is capable of giving rise to interference and even certain
non-electrical equipment may also cause trouble due to generation of static electrical charges. Typical
latter are seawater-lubricated rubber or plastic bearings. In these cases electrical charges produced by
the shaft on the rubbing face of the bearing will give rise to a cracking noise in any adjacent radio set
type.

Interference results from any sudden interruption or change of electrical currents such as surges from switches,
control gear, motor starters, etc. or it can arise from steady-state conditions which in themselves are a
interruptions or reversals. Examples of this type of disturbance vary from the fluorescent tube to thyristors
and motors and generators of all kinds.

Erratic connections can also cause a large amount of trouble because by their nature the trouble is caused

第 3 题 Most of the apparatus used in modern ships are the composite products of a number of manufacturers
a main supply system will have the generator produced by one manufacturer, the control gear by a second,
surveillance device by a third, 第 4 题 the prime mover by a fourth, and so on. Circumstances can arise therefore
where it is necessary to suppress one manufacturer's equipment in order to control interference from others.

from a different manufacturer.

1. The Passage is mainly about _____

- A. electrical apparatus B. non-electrical equipment C. seawater-lubricated rubber **D. interference**

注：这篇文章主要是关于干扰的。

2. The following statements are considered true except_____.

A. only electrical apparatus is capable of giving rise to interference

B. seawater-lubricated rubber bearings can cause trouble due to generation of static electrical charges

C. plastic bearings can also cause trouble due to generation of static electrical charges

D. almost every type of electrical apparatus is capable of giving rise to interference

注：除了“只有电气设备能引起干扰”这种说法以外，下面的各种说法都被认为是正确的。

3. Which statement is true according to the last paragraph?

A. The apparatus such as the generators are produced by many manufacturers.

B. The apparatus such as the prime movers are produced by a number of manufacturers.

C. The apparatus such as the control gears are produced by a lot of manufacturers.

D. Different apparatus in one system in modem ships may be made by different manufacturers.

根据最后一段来看，现代船舶的一个系统中的不同设备可以由不同的制造商制造。

4. The "prime mover" in the last paragraph refers to_____.

A. the main engine

B. the air compressor

C. the A.C. generator

D. the auxiliary engine driving the A.C. generator

最后一段中"prime mover"（原动机）指的是驱动交流发电机的副机。

Passage 39 （原题库第 59 篇）

The separation efficiency of the ALCAP separation system has been thoroughly tested with respect to removal of water, catalyst fines and other inorganic solid particles. **第 1 题** A detailed review and report on results from the laboratory and shipboard tests are presented in Enclosure 2.

These tests were made together with Shell International and Sulzer.

The densities of the tested oils were 991,993 and 1013kg/ m³ at 15 oC.

The test results are summarized as follows:

- seawater contamination is efficiently reduced in heavy fuel oil with densities up to 1013kg/ m³ at 15 oC.

- catalyst fines and other inorganic solid particles are efficiently removed from heavy fuel oil with densities up to

1013kg/ m³ at 15 oC.

第 2 题 - fresh water contamination is efficiently reduced in heavy fuel oil with a density of 993 kg/ m³ at 15 oC.

Example: 3% freshwater was reduced to 0.5 % ~ 0.6%.

However, the upper density limit for satisfactory reduction of freshwater is probably higher, up to 1010kg/ m³.

Additional tests are planned to confirm this.

第 3 题 - the separation efficiency of the ALCAP separation system is as good as or better than a well adjusted purifier (applicable for heavy fuel oil with density to 991 kg/ m³ at 15 oC)

- laboratory and shipboard tests conducted to date confirm that the ALCAP separation system delivers optimum separation efficiency, continuously.

第 4 题 (B) Based on these findings, the recommended maximum density of heavy fuel oil cleaned with the ALCAP separation system is 1010 kg/ m³ at 15 oC measured at 50 oC. The recommended maximum viscosity is 700 cSt at 50 oC.

1. If we want to know the detailed review and report on results from the laboratory and shipboard tests, _____.

A. we should go to Shell international and Sulzer

B. we should contact with the manufacturer

C. we can find them in another technical information

D. we can find them in Enclosure in the technical information

注：若我们想要知道来自实验室试验和船上测试的详细检查及报告的结果我们可以在技术信息的附件中找到。

2. Which of the following statements is NOT true about the test results?
- A. Seawater contamination is efficiently reduced in heavy fuel oil with densities up to 1013 kg/cu.m at 15 oC.
- B. Catalyst fines are efficiently removed from heavy fuel oil with densities up to 1013 kg/ m 3 at 15 oC.
- C. Other inorganic solid particles are efficiently removed from heavy fuel oil with densities up to 1013 kg/ m 3 at 15 oC.
- D. Freshwater contamination is efficiently reduced in heavy fuel oil with densities up to 1013 kg/ m 3 at 15 oC.

注：关于测试结果，下面说法中“在 15℃下密度高达 1013 千克每立方米时，重油中的淡水污染物被有效减少”是不正确的。

3. For fuel oil with density up to 991 kg/ m 3 at 15 oC, the separation efficiency_____.
- A. of a well adjusted purifier is not so good as the ALCAP separation system
- B. of the ALCAP separation system is not better than a well adjusted purifier
- C. of the ALCAP separation system is as good as an incorrectly adjusted purifier
- D. of an incorrectly adjusted purifier is as good as or better than the ALCAP separation system

注：对于 15℃下密度高达 991 kg/ m 3 的油来说，调整好的分油机的分离效率不像 ALCAP 分离系统那样好。

4. The recommended maximum viscosity and density of heavy fuel oil cleaned with the ALCAP separation system is_____.
- A. 700 cSt and 1010 kg/ m 3 at 15 oC
- B. 1010 kg/ m 3 and 700 cSt at 50 oC
- C. 700 cSt at 50 oC and 1010 kg/ m 3 at 15 oC
- D. 1010 kg/ m 3 at 50 oC and 700 cSt at 15 oC

注：用 ALCAP 分离系统净化的重油，推荐的最大粘度和密度是：50 oC 温度下粘度是 700 cSt （厘斯），15 oC 温度下密度是 1010 kg/ m 3。

Passage 40 （原题库第 60 篇）

第 1 题 The alignment of the crankshaft in the bed-plate should be checked at regular intervals to ensure that the shaft is not subjected to additional bending stresses which, under extreme conditions, may cause crankshaft failure. A simple means of checking the alignment is to measure the change in the distance between a pair of webs at each quarter of one cycle as distance from web to web measured at the open end, more or less increases and decreases during one cycle, depending upon the misalignment of the shaft. More information can be obtained by the method than measuring the sagging of the journal in the main bearing.

Crank-web dimensions, i.e. the distance between a set of webs, are reference values which are determined during erection and are recorded in the Acceptance Records.

第 2 题 Measurements are taken with a dial gauge, the points at which it is to be taken for one cylinder in TDC, BDC positions and at exhaust and control sides, two times for each. The average value is to be used and compared, and the value difference is the crankshaft deflection.

第 3 题 (D) A positive difference is an indication of a deflection of the particular throw in downward direction whereas a negative value indicates a deflection in upward direction.

第 3 题 (C) The measurement taken in a ship that is ready for acceptance will not agree with the measurements taken at the manufacturer's works, but they must not, under any circumstances, exceed the specified limits for a realigned crankshaft.

第 3 题 (A) The values obtained when the ship is under ballast will differ from those of the loaded ship and the magnitude of the difference depends on the position of engine in the ship, the stiffness of the foundation and the ship proper.

第 3 题 (B) Moreover, the measurements taken from the warm engine will not agree with the measurements taken when the engine is cold. Onboard measurements should be taken as early as possible in cold and warm condition of the engine and under various ship loads. These measurements are to serve as reference basis for the evaluation of the measurements which are subsequently to be taken at regular intervals. All readings and conditions under which they are taken are to be entered in the service records together with the data. Such data could supply useful information to further investigation.

1. The purpose of alignment of the crankshaft is_____.
- A. to decrease the additional bending stresses
- B. to increase the additional bending stresses
- C. to ensure that the shaft does not stand additional bending stresses

D. to ensure that it should be checked at regular intervals

注：曲轴对中的目的是确保曲轴不会承受额外的弯曲应力。

2. Crank-web dimensions are taken with a dial gauge. For an engine with six cylinders, how many such measurements are to be taken?

A. Two times B. Eight times C. 36 times D. 48 times

注：曲柄臂尺寸用量缸表测取。对于六缸发动机来说，要被测量48次。（从文中可知需测4个位置，每个位置2次，再乘6缸，得出答案）。

3. Which of the following statements is true?

A. The values obtained when the ship is under ballast should be as equal as those of the loaded ship.

B. The measurements taken from the warm engine will differ from those taken from the engine is cold.

C. The measurements taken in a ship will be not different from those taken at the manufacturer's works.

D. A negative value indicates a deflection in downward direction while a positive one indicates a deflection in upward direction. 注：暖机时测取的测量值不同于发动机冷态时测取的值。

4. The word "alignment" in this Passage means_____.

A. misalignment B. Realignment C. arrangement in a circular line D. arrangement in a straight line

注：文章中单词"alignment"意思是排列在一条直线上。

Passage 41 (原题库第61篇)

第1题 The control officer may determine if all operational requirements of Annex I of MARPOL 73/78 have been met, taking into account:

(1) the quantity of oil residues generated;

(2) the capacity of sludge and bilge water holding tanks;

(3) the capacity of the oily water separator.

Including the inspection of the oil record book, the control officer may determine if reception facilities have been used and note any alleged inadequacy of such facilities.

The control officer may determine whether the responsible officer is familiar with the handling of sludge. The relevant items from the guidelines for systems for handling oily wastes in machinery spaces can be used as guidance. 第2题 Taking into account the above, the control officer may determine if the ullage of the

sludge tank is sufficient for the expected generated sludge during the next intended voyage. The control officer should verify that, in respect of ships for which the Administration has waived the requirements of regulation 11, all oily bilge water is retained on board for subsequent discharge to a reception facility.

When reception facilities at other ports have not been used because of inadequacy, the control officer should advise the Master to report the inadequacy of the reception facility to his own flag State, in conformity with MEPC/Circ.215 of April, 1989.

1. All the following factors should be considered by the control officer except_____.

A. the quantity of oil residues generated B. the capacity of sludge holding tanks

C. the capacity of bilge water holding tanks D. the capacity of the oil separator

注：下面除了分油机的处理能力以外的所有因素都是监督官员应该考虑的。

2. The control officer may determine if the ullage of the sludge tank is sufficient for the expected generated sludge during the next intended voyage. According to this sentence, which of the following statements is true?

A. The control officer has known that the sludge tank is too small. B. The next voyage has been decided.

C. The sludge generated during the voyage is too much to be filled into the sludge tank.

D. The ullage of the sludge tank is enough.

注：监督官员应确定渣油柜的剩余空间用于下次计划航程预计产生的油渣是否足够。根据这个句子，下面说法中“下次航程已经确定”是正确的。

3. MARPOL Convention is formulated by_____.

A. the Flag State B. the Port State C. the IMO D. the ILO

MARPOL 公约是由 IMO (国际海事组织) 制定的。

4. The word "waive" is closest in meaning to_____.

A. wait for willingly B. suggest in willing C. insist on willingly D. give up willingly

注: 单词"waive"意思最接近 give up willingly (欣然放弃)。

Passage 42 (原题库第 62 篇)

TWO STEP CONTROLLER ACTION is the action of a controller whose output signal changes from one predetermined value to another when the deviation changes sign. 第 1 题 This controller action is mainly on/off control, for example, a refrigeration unit controlling room temperature, when the temperature rises to a value the refrigeration compressor motor automatically starts, then when the temperature falls to a predetermined value the motor is stopped.

PROPORTIONAL CONTROLLER ACTION is the basic action form of a **continuous** controller whose output signal is proportional to the deviation. In the case of a boiler water level control, if the water level increased steam demand, drops by 20 mm, then the automatic controller output to the feedwater inlet valve may change from 0.6 to 0.7 bar. If the level drops by 40mm, then the automatic controller output would change to 0.8 bar. Offset or droop is an inherent characteristic of proportional controller. 第 2 题 offset is a steady state error when a load change occurs in a controlled system a proportional change occurs in the controller which

INTEGRAL CONTROLLER ACTION is the action of a controller whose output signal changes at a rate which is proportional to the deviation. It is used in conjunction with proportional control in order to remove the offset of the proportional controller.

DERIVATIVE CONTROLLER ACTION is the action of a controller whose output signal is proportional to the rate at which the deviation is changing. The principle object of derivative control is to give quicker response to changes.

第 3 题 Sophisticated controllers for rapid response, minimum offset and reset action would be three term controllers i.e. proportional plus integral plus derivative.

1. TWO STEP CONTROLLER ACTION is mainly_____.

A. proportional control B. integral control C. derivative control D. on-off control

注: (控制器) 双位控制作用主要是开关控制。

2. The word "offset" most probably means_____.

A. predetermined value B. measured value C. off-limit D. sustained deviation

注: 单词"offset"最可能意思是剩余偏差。

3. Which kind of the following controllers is the most sophisticated controller?

A. Proportional controller B. Integral controller C. Derivative controller D. PID controller

注: 最复杂 (最先进) 的控制器是比例积分微分控制器。Sophisticated 最复杂的; 最先进的

4. From the Passage, we can learn that the simplest controller action is_____.

A. TWO-STEP CONTROLLER action B. PROPORTIONAL CONTROLLER action

C. INTEGRAL CONTROLLER action D. DERIVATIVE CONTROLLER action

注: 从文章中我们可以学到最简单的控制器作用是 (控制器) 双位作用。

Passage 43 (原题库第 63 篇)

With the development of modern technology, remote control and automation of a ship's main engine have been widely used on board ship. The remote control and automation of engine operations are advantageous from many points of view. First, a reduction in routine supervisory labor is permitted; particularly the unproductive labor. Engine operation is supervised at the control room or bridge in a convenient manner by the monitor. 第 1 题 The engine room need be manned at night only in bad weather or close waters for safety reasons and preparing the engine.

An additional advantage is that engine mal-operation is automatically sensed and alarmed. Furthermore

cases remedial measures are taken automatically; as 第4题 ~~in the event of failure of an auxiliary such as a lubricating pump, the standby pump is started and put on the line automatically~~. Thus, automatic surveillance provides an additional degree of engine safety and prolonged engine mal-operation is avoided.

第2题 The marine remote control is achieved based on either pneumatic, electronic control systems or combination of both with the electronic system acting as the system giving orders and the pneumatic one the orders. Generally speaking, the pneumatic system is more reliable 第3题 ~~and the electronic system is simple and easy to maintain~~.

- Which of the followings is NOT the advantages of the remote control and automation of engine operation?
A. Routine supervisory labor particularly the unproductive night-service labor is reduced.
B. Engine mal-operation is automatically sensed and alarmed.
C. The engine room need be manned at night in bad weather or close waters.
D. Some remedial measures can be taken automatically.

注：不是发动机操作（实现）遥控和自动化的优点的是：在恶劣天气或狭窄水域，夜间机舱需要配员。

2. The marine remote control is achieved based on ____.

- A. pneumatic control system B. electronic control system
C. either A or B **D. either A or B or combination of both A and B**

注：船舶遥控是以气动控制系统、电控系统或者气动控制系统和电控系统的组合为基础实现的。

(be based on 以...为基础, 以...为根据)

3. The marked advantage of the electronic system is ____.

- A. the best reliability B. simple in construction C. easy to maintenance **D. both B and C**

注：电子系统明显的优点是结构简单并且容易维护。(marked a.明显的, 易见的)

4. In the event of failure of an auxiliary such as a lubricating pump, the standby pump is started and put on the line automatically. "the line" in this sentence refers to ____.

- A. fuel manifold **B. lubricating pipe line** C. auxiliary engine pipe D. generator output line

注：万一辅助机械故障，例如滑油泵，备用泵被启动并且自动接通管路。句子中“the line (管路)”指的是 lubricating pipe line (滑油管路)。

Passage 44 (原题库第64篇)

The engine performance is usually evaluated by comparing them with the corresponding observations from the ship was new. 第3题 The best and most simple method of summarizing and obtaining a clear picture of the parameter changes is to use the synopsis diagram, which includes a model curve and an actual service curves illustrate the functional relationship between the measured data and the parameter they are most or related to. A deviation curve can also be drawn based on the above-mentioned two curves. 第1题 From the deviation curve, it is possible to easily follow the development and to determine which engine component overhauled, and also, from the slope of the curve, to determine approximately when the overhaul should be carried out.

第2题 The mean indicated pressure is a very important parameter, and it, to a certain extent, represents the output, therefore the data of many other important parameters are analyzed as the function of the mean indicated pressure. 第4题 In a synopsis diagram of the engine revolution, deviations from the model curve show whether the propeller is light or heavy, i.e. whether the torque on the propeller is small or large for a specified revolution. It is possible to judge whether the alterations are due to changes in the draught, or an increase in the propulsion resistance, for instance due to fouling of the hull. Valuable information is hereby obtained for determining the docking schedule.

1. By which curve can we determine some engine components should be overhauled?

- A. A model curve B. An actual curve C. A MIP curve **D. A deviation curve**

注：通过自差曲线，我们可以确定哪些发动机原件需要被检修。

2. According to the Passage, to a certain extent, the engine output may be indicated by ____.

- A. the torque on the propeller B. the fouling of the hull
C. the RPM of the engine **D. the MIP of the engine**

注：根据文章来看，在某种程度上，发动机输出可以通过发动机的指示功率标示出来。

3. The word "deviation" in this Passage means_____.

- A. the synopsis diagram B. the model value
C. the actual value **D. the difference between B and C**

注：文章中单词"deviation"的意思是：模型曲线和实际实用曲线的差。

4. The torque on the propeller may vary with_____.

- A. changes in the ship's draught** B. an increase in the propulsion resistance
C. fouling of the ship's hull **D. all the above**

注：螺旋桨上的转矩可以随船舶吃水的变化；推进阻力的增大；船舶船体脏物情况的变化而改变。

Passage 45 (原题库第 65 篇)

Product description

NALFLEET "SEA SHIELD" DISC/FILTER CLEAN is a mixture of solvents, proprietary surfactants and an organic acid. **第 1 题** It is designed specifically for the removal of oily residues and lacquers found in fuel oil purifiers and filters.

第 2 题 NALFLEET "SEA SHIELD" DISC/FILTER CLEAN does not contain any phenols, cresylic acid, chlorinated hydrocarbons and less than 10% aromatics. The formulation meets the latest regulations from 73/78 as recommended by the Bulk Liquids and Gases (BLG) working group of the Marine Environmental Protection Committee (MEPC) of the International Marine Organization (IMO), and is approved by that committee on behalf of IMO. These regulations, effective 1st July 1996, state that additives used for cleaning ship's tanks must **than 10% of a Pollution Category A product.**

(Annex 1I of MARPOL 73/78 now states that petrochemical complex mixtures of hydrocarbons containing more than 10 wt % of C3-C8 alkylbenzenes (i.e. C9-C14 aromatics) and/or poly (C2 and above) cyclic aromatics are assigned to Pollution Category A.)

The formulation also meets the latest OSPARCOM regulation **第 4 题(B)** which bans the use of surfactants based on Alkyl Phenol Ethoxylates in cleaning products.

(The reason for this ban is that Alkyl Phenol Ethoxylates degrade in the environment to Alkyl Phenols which are persistent and slightly oestrogenic-affects the reproduction cycle of organisms)

1. The product is most suitable for removing_____.

- A. solvents** B. proprietary surfactants C. organic acids **D. oily residues and lacquers**

注：这种产品最适合用于去除含油残余物和漆。

2. Which of the following statements is NOT correct?

- A. The product can be used not only in fuel oil purifiers and filters but also in lube oil purifiers and filters.**
B. The product is a mixture of a number of substances.
C. There is not any cresylic acid in the product.
D. The product does not contain any aromatics.

注：这种产品不含任何芳香剂的说法是错误的。aromatics 芳香剂；芳族化合物

3. From the Passage, we can learn that Annex II of Marpol 73/78 concerns on the discharging rules of_____.

- A. oily water **B. poisonous liquid** C. solid garbage D. sanitary sewage

注：从文章中我们可以学到，MARPOL 73/78 公约附则 II 涉及有毒液体的排放规则。

4. The word "ban" in the Passage can be replaced by_____.

- A. permit B. warn **C. forbid** D. prevent

注：文章中单词"ban"可以由 forbid 代替。Forbid 禁止；取缔

Passage 46 (原题库第 66 篇)

Out of the many hazards that can occur on ships, **第 1 题** fire is by far the most frequent, and results in more

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