МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

ВСП «Кілійський транспортний фаховий коледж

Державного університету інфраструктури та технології»

ЗАВДАННЯ

для виконання контрольної роботи з дисципліни

«Англійська мова

(за професійним спрямуванням)»

для здобувачів освіти заочної форми навчання

галузь знань: **27 Транспорт**

спеціальність: **271 «Річковий та морський транспорт»**

271.02 «УСТСК» (ЕСЕУ)

IV курс

2022-2023 н. р.

ЭСЭУ 4
(иностр.)

Variant 1

I. *Translate the text below in written form.*

SAFETY AND OPERATION.

Crankcase raise. Excessive noise from a crankcasc is generally local to one particular area and may have a number of causes. Sudden, loud noises probably indicate the breakage of parts and may cause overheating. In this case the engine must be slowed or stopped, but crankcasc doors may remain closed until safe entry can be made to investigate. Worn or slack camshaft drive gears or chains tend to vibrate in that part of die crankcase. Overheated bearings or glands also generate noise. Knocking may be heard from slack bearings, particularly crosshead guides, as a result of wear, misalignment, slackening or breakage of bolts, studs or other fixtures. Lubrications faults of insufficient oil pressure., failure or choking of connections or passages, reduction in lubricating properties due to excessive temperature or deterioration, and jets of oil splashing against fast-moving surfaces will add to the noise level. Overloading the engine or early ignition will transmit shock loads through the running gear and bearings. Any change or sudden noise pattern must be investigated.

Leaking exhaust valve. This can be detected during operation by high local exhaust temperature with possibly noise and smoke. The compression pressure and peak firing pressure in the cylinder will be reduced. If allowed to continue, damage to the exhaust valve and seat will increase due to burning by high velocity, very hot gases. Partly burned fuel may pass to exhaust grids, turbochargers, silencers and uptakes causing fouling, loss in efficiency, surging of tiirbochargcr, uptake fires or explosions under certain circumstances. To prevent such leakages exhaust valves must be changed and overhauled at regular intervals and valve tapped clearances checked Excessive powers must be avoided and combustion efficiency maintained.

II. *Give the English equivalents for the following word combinations.*

Ряд причин; в этом случае; картерный люк; оставаться закрытым; перегретые подшипники; производить шум; поршневая система охлаждения; перегрузка двигателя; во время работы; высокая скорость.

III. *Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).*

1. The cylinder blocks are secured by long stud bolts.
2. Symmetrical cams were installed for the fuel pumps
3. The row of cylinder blocks made of cast iron are very resistant to corrosion.
4. The engine will be running during the next month.
5. A single-cylinder experimental engine has been put on testbed.

IV. *Replace the verb "to be " by "should". Translate the sentences.*

1. Everything is free and clear for running.
2. The fuel oil service are full.
3. The engine is supercharged.
4. The turbocharger is out of action.

V. State and underline the forms of the Subjunctive mood in the following setitences, translate them into Russian.

1. He demanded that both delivery and suction valves should be mounted on the valve plate.
2. It is required that scavenging ports be placed at the bottom of the cylinder.
3. He ordered that these fuel lines should be repaired by welding.
4. It would be impossible to start compression with a higher pressure.
5. The engineer wishes the fuel oil service tanks must be full.

VI. *Translate the sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.*

1. These rotors must have been made of solid forged type.
2. This shaft should have rotated different speeds.
3. Turbine vibration could have been caused by many reasons.
4. If a metallic sound was heard, it may have assumed that the blading was damaged.

VII. Translate the dialogue into English.

- Каковы давление и температура сжатия?
- Около 100 кг/см^2 и 500 С.
- Топливо впрыскивается под давлением, не так ли?
- Да, и довольно высоком 250-300 кг/см^2.

ЭСЭУ4
(проф.)

Variant 2

I. *Translate the text below in written form.*

SAFETY AND OPERATION.

Scavenge fires. A scavenge fires may be caused by the ignition of unbumed oil and carbon which has been blown from the engine cylinder into the scavenge spaces. This may include unbumed fuel and cylinder lubricating oil and may be due to incorrect combustion caused by a defective injector. faulty fuel pump tinting, incorrect fuel condition, lack of scavenge air, partially choked exhaust, low compression, afterburning, by operating the engine at overload conditions, or due to defective piston rings, badly worn cylinder finer, or by wrongly timed or excessive cylinder lubrication. The oil will build up an scavenge spaces where it will become carbonised by further heating and will then reach s condition in which ft can burn in the presence of air. It may be ignited by hot gases and burning particles from blow past of piston rings, indications of a scavenge fire are loss in power and irregular nmrring of the engine, high exhaust temperatures of corresponding шив, smoke in exhaust gas, high local temperature in scavenge trunk, surging of turbocharger, and sparks and smoke emitted from scavenge drains. If a fire is detected engine speed must be reduced, fuel shut *off* from the affected units, cylinder lubrication increased and scavenge drains shut A minor fire may shortly bum out and conditions will gradually return to normal. The affected units should be run on reduced power until inspection of the scavenge trunking and overhaul of the cylinder and piston can be done at the earliest opporturaty. Should a fire persist, if there is a risk of the fire extending or if the scavenge trunk is adjacent to the crankcase with risk of a hot spot developing, the engine must be stopped., normal cooling maintained and h may be advisable to engage turning gear to prevent seizure. Fire extinguishing medium should be applied through fittings in the scavenge trunk: these may inject carbon dioxide, dry powder or smothering steam.

II. *Give the English equivalents of the following word combinations.*

Быть вызванным; не сожженное топливо; смазка цилиндра; неправильное сгорание; топливный насос; условия перегрузки; излишняя смазка цилиндра, дальнейшее нагревание, поршневые кольца, возвращаться к нормальным условиям.

III. Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).

1. This engine operates at engine speeds of 210 to 110 rev/min.
2. The new design was developed some years ago.
3 . In recent years various electrical and electronic devices have been introduced for the testing and maintenance of spark-ignition equipment.
4. The cylinder blocks and bedplates are held in compression by long tie-bohs
5. A four-cycle Vee type engine will soon be nmning.

IV. Replace the verb "to be" by "should". Translate the sentences.

1. Air pressure are normal on the gauges.
2. The foel oil service is to be Ml
3. Starting up in the reverse direction is done very gently .
4 . That trouble is eliminated quickly.

V. State and underline the forms of the Subjunctive mood in the following sentences, translate them inio Russian.

1. It is required that the new spare parts be delivered in time.
2. The new alloy must be thoroughly tested that we may use it in our design.
3. The engineer demanded that the spare parts which are to be used in the engine should be tested.
4. He wished that a through test of this alloy would be made.
5. The specialist must know how the selected material will resist loading conditions last any accidents should happend.
6. He demanded that this trouble should be eliminated quickly.

VI. Translate the sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.

1 . They may have checked the level
2. The mechanic could have done this work some days ago.
3. The temperature of the water must have been extremely high.
4. The ship's personal should have tested the new equipment

VII. *Translate the dialogue into English.*

А *что* на счет конструкции двигателя?

- Я знаю это тоже. Это крейцкопфные, транковые и двигатели с противоположно двигающимся поршнем
- О, я вижу, вы знакомы с дизельными двигателями.
- Да, знаком.

ЭСЭУ4
(проф)

Variant 3

I. *Translate the text below in -written form.*

SAFETY AND OPERATION.

Starting air system explosion. Possible causes of an explosion in high pressure starting ak pipelines are the continuous leaking of a defective cylinder non-return valve while the engine is operating, or such a valve sticking in the open position during manoeuvring. Under normal operation, some rubricating oil mist may be discharged from die air compressor to the air start system This oil may be from compressor cylinder lubrication, faulty oil scraper rings or may be drawn in through the air suction with corrtammated engme-rcxtfri atmosphere. The discharge is kept to a minimum by draining the aftercooler, ak receiver and starting system. Oil will deposit as a thin moist film over internal pipe surfaces but is not readily combustible. If a cylinder non-return valve should leak while the engine is in operation, some hot gas, possibly with unburned fuel and cylinder lubricating oil, may be blown through the valve to the adjacent air manifold With further heating from the leaky valve, this, together with the already deposited oil film, will carbonise ami form incandescent carbon. If starting air is applied to the system while still hot, the high pressure air coming into contact with the burning carton may cause an explosion. Such an explosion will cause a flame to pass back through the air start pipe system, evaporating the deposited oil film and igniting it in the presence of ak. Very high velocities and Shockwaves are generated which may rupture pipes and fittings. To prevent an explosion, ak start valves mast be correctly maintained ami lubricating to ensure correct timing and free movement with positive closing. Oil in the system must be kept to a minimum, pipe lines must be drained and cleaned internally when necessary and oil discharge from air compressors must be kept to a minimum by good maintenance.

II. Give the English equivalents of the following word combinations.

Возможные причины; высокое пусковое давление; постоянная утечка; при нормальной работе; система пуска; внутренние поверхности; обратный клапан; быть в работе; воздушный трубопровод; спусковой клапан.

III. Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).

1. When valves in the cover are employed for scavenging purposes the construction depends on the number of valves.
2. The cylinder head must be designed to be of 4 valve configuration
3. Each advance in the development of the diesel engine has dictated the need for design changes to piston rings.
4. The cylinder blocks are made of cast iron.
5. The pistons were made in two parts.

IV. Replace Ike verb "to be" by "should*'. Translate the sentences.

1. The thermometer on the lubricating oil lines are watched
2. Regular readings are taken from the thermometers,
3. Certain conditions are maintained
4. The lubricators are adjusted

V. State and underline the form of the Subjunctive mood in the following sentences, translate them into Russian.

1. We propose that the engineer use new substitute materials in the construction of the new machine.
2. It is desirable that the number of the spare parts should be increased
3. If the regulator -was insufficiently open, all liquid would have evaporated before reaching the end of the circuit.
4. He wished that evaporator would cool the surrovmdiag air.
5. They proposed that the engineer adjust this regulator.
6. It is necessary that the govmior should be installed on the prime mover.

VI. Translate the sentence paying attention to the translation of the modal verbs with the Perfect Infinitive.

1. The air must have passed through vanes.
2. Nozzle may have been welded to the diaphragm,
3. Unequal halting of the rotor should have been avoided.
4. The ckculating hue could have been dosed.

VII. Translate the dialogue into English.

- Во время хода сжатия все клапана следует закрыть, не так ли?
- Какие клапана вы имеете в виду?
- Впускной клапан, топливный клапан и выхлопной клапан.
- Да, конечно. В противном случае не было бы компрессии.

ЭСЭУ 4
(проф.)

Variant 4

I. *Translate the text below in-written form.*

SAFETY AND OPERATION.

Change in oil level. Any fluctuation in the level of lubricating oil in the engine sump or drain tank must be investigated; h may be due to a number of omses, ft may occur to a limited extend due to movement of the ship - either pitching or rolling - particularly if the oil level gauge is not situated at the centre of the tank. The reliability of the level gauge should also be checked since float or transmission equipment may be faulty. A check must be carried out to ascertain that no valves have been incorrectly opened or closed, allowing oil to enter or leave the system. If the oil level has risen it is possible that there is aleak into the system, which, may be water from leaks in the cooling system, such a glands or seal rings, allowing contamination of the crankcasc from cylinder jackets, water cooled pistons etc. There may be a leak at the oil cooler, although the oil pressure should be greater than that of sea water to prevent this. A test for water witt indicate such a teak. Although fuel contamination could occur under certain circumstances, it is unlikely to be a such a rate as to be noticed at sump level. A flashpoint test on the oil will ascertain if fuel is present. Choking of the oil fitters or failure of the pumps may allow a level rise, but tins will be evident from the pressures within the system and perhaps pressure alarms. If the oil level has fallen there may be an oil leak in the system and this must be searched for at all pumps, fitters, pipes, joints and glands, at the crankcase and the drain tank. The water seal in the oil purifier together with the purifier pump should also be checked. Choking of oil drain grids within the crankcase will cause the oil level to build up there and not return to the drain tank. The possibility of the pressure relief valves allowing oil to leak from the system should be examined.

II. *Give UK English equivalents of the following -word combinations.*

Уровень масла; изменение уровня масла; спускной резервуар; движение судна; быть расположенным в центре: утечка в системе; давление масла; при определенных обстоятельствах, высокая выходная температура; система охлаждения.

III. *Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).*

1. Metais expand and contract in proportion to their temperature,
2. Cylinder heads «Ш be equipped with double-bottomed cooling, water space
3. A substantially sized crankshaft has been used in this design.
4. All of this is being accomplished with little change in the original design.
5. The oil is supplied to the main bearings.

IV.Replace the verb "to be" by "should". Translate the sentences

1. The gauges on the &el oil service tanks are watched.
2. Preparations for getting under way are started an hour before leaving.
3. Each engine is turned through a complete revolution.
4. The air pressure is normal on the gauges.

V *State and underline the forms of the Subjunctive mood in the following sentences, translate them into Russian.*

1. It is important that many new alloys having great resistance to various loading conditions be developed.
2. They proposed that this device should cool the surrounding air.
3. If the hand control valves have been used, they should always be closed immediately after the compressor is stopped.
4. The engineer demands that the bearings temperatures be observed all the time.
5. He wishes that the turning gear be disconnected.
6. It is requiredthat the power piston and the shaft be held stationary.

VI. *Translate the sentences paying attention to the translation of die modal verbs wtth the Perfect Infinitive.*

1. The air registers should have controlled the air supply.
2. These nozzles must have been made of special steel.
3. The troubles may have been caused by unequal heating of the rotor.
4. The fuel transfer pump could have delivered fuel.

VII. *Translate the dialogue into English*

- Сейчас мы продолжим нашу беседу. Нам нужно изучить принцип работы двухтактного двигателя.
- Есть ли различия в конструкции между четырёхтактным и двухтактным двигателем?
- Да, есть одно отличие.

ЭСЭУ 4
(ИЦООР)

Variant 5

I. *Translate the text below in written form.*

SAFETY AND OPERATION.

Crankcase raise. Excessive noise from a crankcasc is generally local to one particular area and may have a number of causes. Sudden, loud noises probably indicate the breakage of parts and may cause overheating. In this case the engine must be slowed or stopped, but crankcasc doors may remain closed until safe entry can be made to investigate. Worn or slack camshaft drive gears or chains tend to vibrate in that part of die crankcase. Overheated bearings or glands also generate noise. Knocking may be heard from slack bearings, particularly crosshead guides, as a result of wear, misalignment, slackening or breakage of bolts, studs or other fixtures. Lubrications faults of insufficient oil pressure., failure or choking of connections or passages, reduction in lubricating properties due to excessive temperature or deterioration, and jets of oil splashing against fast-moving surfaces will add to the noise level. Overloading the engine or early ignition will transmit shock loads through the running gear and bearings. Any change or sudden noise pattern must be investigated.

Leaking exhaust valve. This can be detected during operation by high local exhaust temperature with possibly noise and smoke. The compression pressure and peak firing pressure in the cylinder will be reduced. If allowed to continue, damage to the exhaust valve and seat will increase due to burning by high velocity, very hot gases. Partly burned fuel may pass to exhaust grids, turbochargers, silencers and uptakes causing fouling, loss in efficiency, surging of tiirbochargcr, uptake fires or explosions under certain circumstances. To prevent such leakages exhaust valves must be changed and overhauled at regular intervals and valve tapped clearances checked Excessive powers must be avoided and combustion efficiency maintained.

II. *Give the English equivalents for the following word combinations.*

Ряд причин; в этом случае; картерный люк; оставаться закрытым; перегретые подшипники; производить шум; поршневая система охлаждения; перегрузка двигателя; во время работы; высокая скорость.

III. *Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).*

1. The cylinder blocks are secured by long stud bolts.
2. Symmetrical cams were installed for the fuel pumps
3. The row of cylinder blocks made of cast iron are very resistant to corrosion.
4. The engine will be running during the next month.
5. A single-cylinder experimental engine has been put on testbed.

IV. *Replace the verb "to be " by "should". Translate the sentences.*

1. Everything is free and clear for running.
2. The fuel oil service are full.
3. The engine is supercharged.
4. The turbocharger is out of action.

V. State and underline the forms of the Subjunctive mood in the following setitences, translate them into Russian.

1. He demanded that both delivery and suction valves should be mounted on the valve plate.
2. It is required that scavenging ports be placed at the bottom of the cylinder.
3. He ordered that these fuel lines should be repaired by welding.
4. It would be impossible to start compression with a higher pressure.
5. The engineer wishes the fuel oil service tanks must be full.

VI. *Translate the sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.*

1. These rotors must have been made of solid forged type.
2. This shaft should have rotated different speeds.
3. Turbine vibration could have been caused by many reasons.
4. If a metallic sound was heard, it may have assumed that the blading was damaged.

VII. Translate the dialogue into English.

- Каковы давление и температура сжатия?
- Около 100 кг/см^2 и 500 С.
- Топливо впрыскивается под давлением, не так ли?
- Да, и довольно высоком 250-300 кг/см^2.

ЭСЭУ4
(прогр.)

Контрольная работа

Variant 6

I. Translate the text below in written form.

SAFETY AND OPERATION.

Crankcase and explosion. The cause of a crankcase explosion is a"hot spot" or overheated part within or adjacent to the crankcase of ah operating engine. Under normal running conditions the air in a crankcase will contain oil droplets formed by rubricating oil splashing from the bearings onto moving surfaces. This mixture will not readily burn or explode. Crankcase lubricating oil should normally have a high closed flashpoint (above 200° C) and this must be maintained in order to reduce risk of explosions. The most common, cause of lowering the flashpoint is contamination with fuel oil. Iocal hot spots may arise due to overheating of bearings, piston rod gland, timing chain, hot combustion gas or sparks from piston biowpast in engines where no diaphragm is fitted; or from fires in spaces adjacent to the crankcase, such as scavenge trunks etc. Such sources can be eliminated by proper maintenance, correct lubrication and oil condition-, cleanliness and by avoiding overloading the engine. The general use of white metal bearing materials which have moderate softening and melting temperatures also helps to avoid a rapid rise in temperature. If a hot spot exists, some oil will come into contact with it and will be vaporised, circulate to cooler parts of the crankcase and there condense to form a white mist of finely divided oil particles well mixed with air. This mist is combustible within certain concentrations. If the mist should now circulate back to the hot spot in such concentrations, it will be ignited and a primary or minor crankcase explosion will occur. Ihis explosion causes a flame front and pressure wave to accelerate through the crankcase, vaporising further oildroplets in its patit

II. *Give the English equivalents of the following word combinations.*

Работающий двигатель; нормальные условия работы; движущиеся поверхности; сократить риск чего-либо; общая причина; перегрев подшипников; воспламенение газа, соответствующая эксплуатация; правильная смазка; температура плавления.

III. Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).

1. During the last few years there has been a marked advance in engine design.
2. The pipeline is kept rilled with oil.
3. It is necessary, if good combustion is to be obtained, that the fuel be mixed with the entire mass of air trapped in the cylinder-clearance volume.
4. The oil acts upon the surface created by the design of the spray valve needle.
5. *A* number of modifications have been introduced.

IV. Replace the verb "to be" by "should". Translate the sentences.

1. The lubricating oil circulating pump is started.
2. All the nmning conditions are normal.
3. The cylinders and heads are heated before starting.
4. Prompt beginning of combustion is to be ensured

V. *State and underline the forms of the Subjunctive mood in the following sentences, translate them into Russian.*

1. It is necessary that the engineer should replace the connecting nxl in two hours.
2. The designer proposed that a new corrosion resistant alloy be utilised in this construction.
3. Lest the structure should fail the engineer should have a complete knowlefge of the propeities of these materials.
4. We wish the delivery valves would be mounted.
5. It would be impossible to measure the pressure in the condenser without the gauge.
6. The engineer orders that all devices which one can see on the main engine be enumerated.

VI. Translate tlie sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.

1. The motonnen should have repaired the engine two days ago.
2. The work of these mechanisms must have checked.
3. Can these troubles have been performed in such a short time?
4. They may have examined the main bofler.

VII. *Translate the dialogue into English.*

- Вы знаете типы дизельных двигателей?
- Конечно, знаю. Эго четырёхтактные и двухтактные двигатели.
- А как насчет принципа работы, каковы они?
- Простого или двойного действия.

ЭСЭУ 4
(проф.)

Variant 7

I. *Translate the text below in written form.*

SAFETY AND OPERATION.

Scavenge fires. A scavenge fires may be caused by the ignition of unbumed oil and carbon which has been blown from the engine cylinder into the scavenge spaces. This may include unbumed fuel and cylinder lubricating oil and may be due to incorrect combustion caused by a defective injector, faulty fuel pump tinting, incorrect fuel condition, lack of scavenge air, partially choked exhaust, low compression, afterburning, by operating the engine at overload conditions, or due to defective piston rings, badly worn cylinder finer, or by wrongly timed or excessive cylinder lubrication. The oil will build up an scavenge spaces where it will become carbonised by further heating and will then reach s condition in which ft can burn in the presence of air. It may be ignited by hot gases and burning particles from blow past of piston rings, indications of a scavenge fire are loss in power and irregular nmrring of the engine, high exhaust temperatures of corresponding шив, smoke in exhaust gas, high local temperature in scavenge trunk, surging of turbocharger, and sparks and smoke emitted from scavenge drains. If a fire is detected engine speed must be reduced, fuel shut *off* from the affected units, cylinder lubrication increased and scavenge drains shut A minor fire may shortly bum out and conditions will gradually return to normal. The affected units should be run on reduced power until inspection of the scavenge trunking and overhaul of the cylinder and piston can be done at the earliest opporturaty. Should a fire persist, if there is a risk of the fire extending or if the scavenge trunk is adjacent to the crankcase with risk of a hot spot developing, the engine must be stopped., normal cooling maintained and h may be advisable to engage turning gear to prevent seizure. Fire extinguishing medium should be applied through fittings in the scavenge trunk: these may inject carbon dioxide, dry powder or smothering steam.

II. *Give the English equivalents of the following word combinations.*

Быть вызванным; не сожженное топливо; смазка цилиндра; неправильное сгорание; топливный насос; условия перегрузки; излишняя смазка цилиндра, дальнейшее нагревание, поршневые кольца, возвращаться к нормальным условиям.

III. Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).

1. This engine operates at engine speeds of 210 to 110 rev/min.
2. The new design was developed some years ago.
3 . In recent years various electrical and electronic devices have been introduced for the testing and maintenance of spark-ignition equipment.
4. The cylinder blocks and bedplates are held in compression by long tie-bohs
5. A four-cycle Vee type engine will soon be nmning.

IV. Replace the verb "to be" by "should". Translate the sentences.

1. Air pressure are normal on the gauges.
2. The foel oil service is to be Ml
3. Starting up in the reverse direction is done very gently .
4 . That trouble is eliminated quickly.

V. State and underline the forms of the Subjunctive mood in the following sentences, translate them inio Russian.

1. It is required that the new spare parts be delivered in time.
2. The new alloy must be thoroughly tested that we may use it in our design.
3. The engineer demanded that the spare parts which are to be used in the engine should be tested.
4. He wished that a through test of this alloy would be made.
5. The specialist must know how the selected material will resist loading conditions last any accidents should happend.
6. He demanded that this trouble should be eliminated quickly.

VI. Translate the sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.

1 . They may have checked the level
2. The mechanic could have done this work some days ago.
3. The temperature of the water must have been extremely high.
4. The ship's personal should have tested the new equipment

VII. *Translate the dialogue into English.*

А *что* на счет конструкции двигателя?

- Я знаю это тоже. Это крейцкопфные, транковые и двигатели с противоположно двигающимся поршнем
- О, я вижу, вы знакомы с дизельными двигателями.
- Да, знаком.

ЭСЭУ 4
(проф.)

Variant: 8

I. *Translate the text below in -written form.*

SAFETY AND OPERATION.

Starting air system explosion. Possible causes of an explosion in high pressure starting ak pipelines are the continuous leaking of a defective cylinder non-return valve while the engine is operating, or such a valve sticking in the open position during manoeuvring. Under normal operation, some rubricating oil mist may be discharged from die air compressor to the air start system This oil may be from compressor cylinder lubrication, faulty oil scraper rings or may be drawn in through the air suction with corrtammated engme-rcxtfri atmosphere. The discharge is kept to a minimum by draining the aftercooler, ak receiver and starting system. Oil will deposit as a thin moist film over internal pipe surfaces but is not readily combustible. If a cylinder non-return valve should leak while the engine is in operation, some hot gas, possibly with unburned fuel and cylinder lubricating oil, may be blown through the valve to the adjacent air manifold With further heating from the leaky valve, this, together with the already deposited oil film, will carbonise ami form incandescent carbon. If starting air is applied to the system while still hot, the high pressure air coming into contact with the burning carton may cause an explosion. Such an explosion will cause a flame to pass back through the air start pipe system, evaporating the deposited oil film and igniting it in the presence of ak. Very high velocities and Shockwaves are generated which may rupture pipes and fittings. To prevent an explosion, ak start valves mast be correctly maintained ami lubricating to ensure correct timing and free movement with positive closing. Oil in the system must be kept to a minimum, pipe lines must be drained and cleaned internally when necessary and oil discharge from air compressors must be kept to a minimum by good maintenance.

II. Give the English equivalents of the following word combinations.

Возможные причины; высокое пусковое давление; постоянная утечка; при нормальной работе; система пуска; внутренние поверхности; обратный клапан; быть в работе; воздушный трубопровод; спусковой клапан.

III. Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).

1. When valves in the cover are employed for scavenging purposes the construction depends on the number of valves.
2. The cylinder head must be designed to be of 4 valve configuration
3. Each advance in the development of the diesel engine has dictated the need for design changes to piston rings.
4. The cylinder blocks are made of cast iron.
5. The pistons were made in two parts.

IV. Replace Ike verb "to be" by "should*'. Translate the sentences.

1. The thermometer on the lubricating oil lines are watched
2. Regular readings are taken from the thermometers,
3. Certain conditions are maintained
4. The lubricators are adjusted

V. State and underline the form of the Subjunctive mood in the following sentences, translate them into Russian.

1. We propose that the engineer use new substitute materials in the construction of the new machine.
2. It is desirable that the number of the spare parts should be increased
3. If the regulator -was insufficiently open, all liquid would have evaporated before reaching the end of the circuit.
4. He wished that evaporator would cool the surrovmdiag air.
5. They proposed that the engineer adjust this regulator.
6. It is necessary that the govmior should be installed on the prime mover.

VI. Translate the sentence paying attention to the translation of the modal verbs with the Perfect Infinitive.

1. The air must have passed through vanes.
2. Nozzle may have been welded to the diaphragm,
3. Unequal halting of the rotor should have been avoided.
4. The ckculating hue could have been dosed.

VII. Translate the dialogue into English.

- Во время хода сжатия все клапана следует закрыть, не так ли?
- Какие клапана вы имеете в виду?
- Впускной клапан, топливный клапан и выхлопной клапан.
- Да, конечно. В противном случае не было бы компрессии.

ЭСЭУ4
(проф.)

Variant 9

I. *Translate the text below in-written form.*

SAFETY AND OPERATION.

Change in oil level. Any fluctuation in the level of lubricating oil in the engine sump or drain tank must be investigated; h may be due to a number of omses, ft may occur to a limited extend due to movement of the ship - either pitching or rolling - particularly if the oil level gauge is not situated at the centre of the tank. The reliability of the level gauge should also be checked since float or transmission equipment may be faulty. A check must be carried out to ascertain that no valves have been incorrectly opened or closed, allowing oil to enter or leave the system. If the oil level has risen it is possible that there is aleak into the system, which, may be water from leaks in the cooling system, such a glands or seal rings, allowing contamination of the crankcasc from cylinder jackets, water cooled pistons etc. There may be a leak at the oil cooler, although the oil pressure should be greater than that of sea water to prevent this. A test for water witt indicate such a teak. Although fuel contamination could occur under certain circumstances, it is unlikely to be a such a rate as to be noticed at sump level. A flashpoint test on the oil will ascertain if fuel is present. Choking of the oil fitters or failure of the pumps may allow a level rise, but tins will be evident from the pressures within the system and perhaps pressure alarms. If the oil level has fallen there may be an oil leak in the system and this must be searched for at all pumps, fitters, pipes, joints and glands, at the crankcase and the drain tank. The water seal in the oil purifier together with the purifier pump should also be checked. Choking of oil drain grids within the crankcase will cause the oil level to build up there and not return to the drain tank. The possibility of the pressure relief valves allowing oil to leak from the system should be examined.

II. *Give UK English equivalents of the following -word combinations.*

Уровень масла; изменение уровня масла; спускной резервуар; движение судна; быть расположенным в центре: утечка в системе; давление масла; при определенных обстоятельствах, высокая выходная температура; система охлаждения.

III. *Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).*

1. Metais expand and contract in proportion to their temperature,
2. Cylinder heads «Ш be equipped with double-bottomed cooling, water space
3. A substantially sized crankshaft has been used in this design.
4. All of this is being accomplished with little change in the original design.
5. The oil is supplied to the main bearings.

IV.Replace the verb "to be" by "should". Translate the sentences

1. The gauges on the &el oil service tanks are watched.
2. Preparations for getting under way are started an hour before leaving.
3. Each engine is turned through a complete revolution.
4. The air pressure is normal on the gauges.

V *State and underline the forms of the Subjunctive mood in the following sentences, translate them into Russian.*

1. It is important that many new alloys having great resistance to various loading conditions be developed.
2. They proposed that this device should cool the surrounding air.
3. If the hand control valves have been used, they should always be closed immediately after the compressor is stopped.
4. The engineer demands that the bearings temperatures be observed all the time.
5. He wishes that the turning gear be disconnected.
6. It is requiredthat the power piston and the shaft be held stationary.

VI. *Translate the sentences paying attention to the translation of die modal verbs wtth the Perfect Infinitive.*

1. The air registers should have controlled the air supply.
2. These nozzles must have been made of special steel.
3. The troubles may have been caused by unequal heating of the rotor.
4. The fuel transfer pump could have delivered fuel.

VII. *Translate the dialogue into English*

- Сейчас мы продолжим нашу беседу. Нам нужно изучить принцип работы двухтактного двигателя.
- Есть ли различия в конструкции между четырёхтактным и двухтактным двигателем?
- Да, есть одно отличие.

ЭСЭУ 4
(иросф.)

Variant 10

I. *Translate the text below in written form.*

SAFETY AND OPERATION.

Crankcase raise. Excessive noise from a crankcasc is generally local to one particular area and may have a number of causes. Sudden, loud noises probably indicate the breakage of parts and may cause overheating. In this case the engine must be slowed or stopped, but crankcasc doors may remain closed until safe entry can be made to investigate. Worn or slack camshaft drive gears or chains tend to vibrate in that part of die crankcase. Overheated bearings or glands also generate noise. Knocking may be heard from slack bearings, particularly crosshead guides, as a result of wear, misalignment, slackening or breakage of bolts, studs or other fixtures. Lubrications faults of insufficient oil pressure., failure or choking of connections or passages, reduction in lubricating properties due to excessive temperature or deterioration, and jets of oil splashing against fast-moving surfaces will add to the noise level. Overloading the engine or early ignition will transmit shock loads through the running gear and bearings. Any change or sudden noise pattern must be investigated.

Leaking exhaust valve. This can be detected during operation by high local exhaust temperature with possibly noise and smoke. The compression pressure and peak firing pressure in the cylinder will be reduced. If allowed to continue, damage to the exhaust valve and seat will increase due to burning by high velocity, very hot gases. Partly burned fuel may pass to exhaust grids, turbochargers, silencers and uptakes causing fouling, loss in efficiency, surging of tiirbocharger, uptake fires or explosions under certain circumstances. To prevent such leakages exhaust valves must be changed and overhauled at regular intervals and valve tapped clearances checked Excessive powers must be avoided and combustion efficiency maintained.

II. *Give the English equivalents for the following word combinations.*

Ряд причин; в этом случае; картерный люк; оставаться закрытым; перегретые подшипники; производить шум; поршневая система охлаждения; перегрузка двигателя; во время работы; высокая скорость.

III. *Translate the following sentences into Russian and define how the predicate is expressed (tense and voice).*

1. The cylinder blocks are secured by long stud bolts.
2. Symmetrical cams were installed for the fuel pumps
3. The row of cylinder blocks made of cast iron are very resistant to corrosion.
4. The engine will be running during the next month.
5. A single-cylinder experimental engine has been put on testbed.

IV. *Replace the verb "to be " by "should". Translate the sentences.*

1. Everything is free and clear for running.
2. The fuel oil service are full.
3. The engine is supercharged.
4. The turbocharger is out of action.

V. State and underline the forms of the Subjunctive mood in the following setitences, translate them into Russian.

1. He demanded that both delivery and suction valves should be mounted on the valve plate.
2. It is required that scavenging ports be placed at the bottom of the cylinder.
3. He ordered that these fuel lines should be repaired by welding.
4. It would be impossible to start compression with a higher pressure.
5. The engineer wishes the fuel oil service tanks must be full.

VI. *Translate the sentences paying attention to the translation of the modal verbs with the Perfect Infinitive.*

1. These rotors must have been made of solid forged type.
2. This shaft should have rotated different speeds.
3. Turbine vibration could have been caused by many reasons.
4. If a metallic sound was heard, it may have assumed that the blading was damaged.

VII. Translate the dialogue into English.

- Каковы давление и температура сжатия?
- Около 100 кг/см^2 и 500 С.
- Топливо впрыскивается под давлением, не так ли?
- Да, и довольно высоком 250-300 кг/см^2.