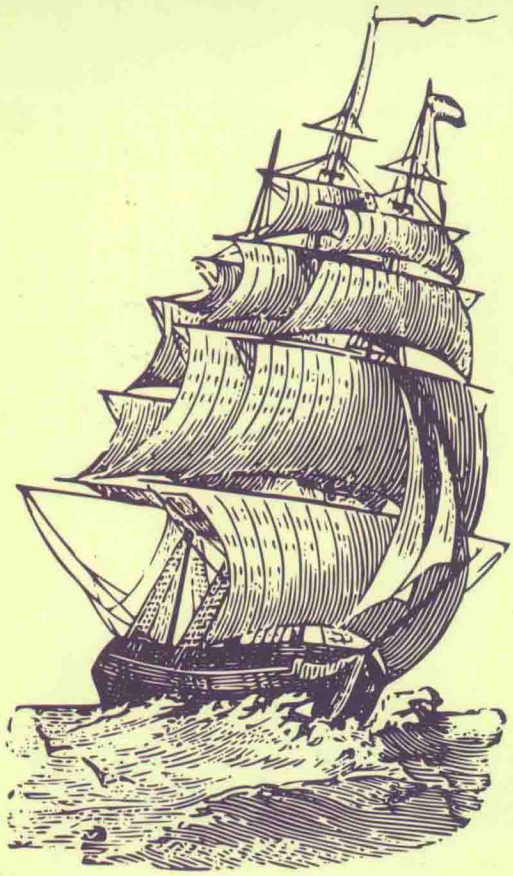
轮机英语听力与会话

TURBINE ENGLISH LISTENING AND SPEAKING

胡旭令 王丽娟 邵明芹 编著



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内 容 简 介

本课程是海船船员适任证书考试中一门必需评估的课程。本教材是根据《STCW 公约》马尼拉修正案要求，结合笔者多年教学经验、资料积累汇编而成。

本教材内容主要包括三部分。第一部分是轮机专业的日常会话，主要内容包括与驾驶台通讯、物料与备件、加油、日常维修、值班、消防、防油污染、船上训练、事故、检测、修理、交接班、SC 检查等。主要目的是一方面让学生了解机舱的日常用语及专业词汇，另一方面提高学生的听说能力。第二部是轮机英语听力与会话评估考试中的会话部分的参考答案，主要内容包括公共用语、机舱日常业务（主机系统和辅助设备）、驾机联系、应急情况、对外业务联系，以及 PSC 检查等。主要目的是让学员及时了解评估考试内容，从容备战。第三部分是附录，主要包括风力等级、海况等级表、舵令、车钟令、部分单位及符号读法，常用物料等。

本书可用为船员应试、培训教材，也可供海运院校的师生参考使用。

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前　言

随着全球航运事业的不断发展，国际市场对船员的需求量将持续增加，对船员素质的要求也日益增高。船员对外劳务输出既有利于缓解国内就业压力，也有助于促进我国航运人才队伍的发展和壮大。与其他第三世界国家的船员相比，我国船员业务能力较强，能够吃苦耐劳，在一定程度上受到了外方船东的认可。但一个不容争辩的事实是我们的船员英语听说能力较差，不善于沟通。这在很大程度上制约了我国船员自身优势的发挥，降低了参与国际竞争的能力。如何改变这种不利局面，切实提高他们英语听说的能力已经成为了摆在各大高等航运学校英语听说教学中的重大课题。“轮机英语听力与会话”已被国家海事主管部门确定为海船船员适任证书考试中一门必需的评估课程。

本书是根据《STCW公约》马尼拉修正案要求，结合笔者多年教学经验、资料积累汇编而成。本书适用于参加海船船员适任证书统考“轮机英语听力与会话”评估考试以及即将毕业参加工作面试的航海类院校毕业生。

本书由山东交通学院海运学院胡旭令、王丽娟、邵明芹等老师主要编著，郭俊杰、张宁、高维杰、吴硕、朱保华等老师参与了部分教材的编写任务。其中，郭俊杰负责编写Part One第1到第5单元，张宁负责编写Part One第5到第10单元，高维杰负责编写Part One第10到第15单元，吴硕负责编写口语部分的问答题，朱保华负责编写口语部分的口述部分。

由于教学任务重，时间紧，加之编者的语言水平及专业知识所限，虽倾尽全力，错误在所难免，望使用者批评指正。

编　者

2012年6月于威海

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PART ONE

UNIT 1 FAMILIARIZATION WITH THE ENGINE ROOM

Part A

Pre-reading

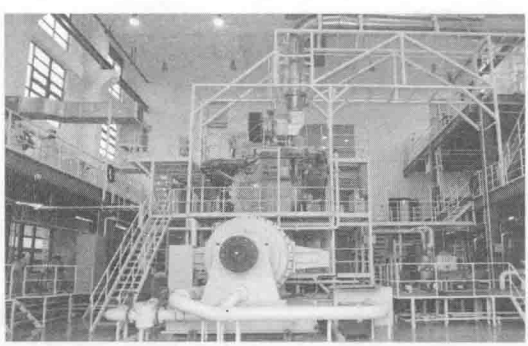
Read the following material and answer the questions.

On a ship, the engine room, or ER, commonly refers to the machinery spaces of a vessel. To increase the safety and damage survivability of a vessel, the machinery necessary for operations may be segregated into various spaces, the engine room is one of these spaces, and is generally the largest physical compartment of the machinery space. The engine room houses the vessel's prime mover, usually some variations of a heat engine - diesel engine, gas or steam turbine. On some ships, the machinery space may comprise more than one engine room, such as forward and aft, or port or starboard engine rooms, or may be simply numbered.

On a large percentage of vessels, ships and boats, the engine room is located near the bottom, and at the rear, or aft, end of the vessel, and usually comprises few compartments. This design maximizes the cargo carrying capacity of the vessel and situates the prime mover close to the propeller, minimizing equipment cost and problems posed from long shaft lines. The engine room on some ships may be situated mid-ship, especially on vessels built from 1900 to the 1960s. With the increased use of diesel electric propulsion packages, the engine room(s) may be located well forward, low or high on the vessel, depending on the vessel use.

Answer the following questions:

1. What are there in the engine room?
2. Where may the engine room be located on a ship?



Speaking Tasks

Dialogue 1

S1: What type of main engine is there?

S2: It is Called SULZER 6RTA 52U. Its rating power is 6000kW.

S1: What kind of turbocharger is it?

S2: It is of the ABB255. Its designed speed is 22000rpm, and operating speed is 16000rpm.

S1: Does the main engine have a lot of advanced technology?

S2: Yes. For example, it is of highly supercharged type. The pressure of supercharged air reaches 2.8kg/cm^2. In addition, the main engine is equipped with variable timed injector and electrical indicators.

S1: Is fuel oil changed over to diesel oil under the manoeuvring condition?

S2: In normal conditions, it is not necessary for fuel oil to change over to diesel oil.

S1: That's all right.

Dialogue 2

S1: By the way, Chief Engineer, how many revolutions does our main engine run? I know the rated rpm is 115.

S2: We run it at 105 now.

S1: The ship will arrive at the Suez at 10 a.m. tomorrow with the present speed. How is the main engine? Is it possible to speed up?

S2: On the whole, it operates quite well. With the present working condition and main engine power output, to increase from 5 to 6 rpm would be permissible. I think we can arrive at Suez 2 hours earlier.

S1: Right. We all agree on it.

S2: Captain, you see, we have stayed at Marseilles Port for several days, the fouling on the ship hull greatly increased her resistance. If we want to increase more output, the main engine would be over loaded.

S1: Quite right. You know it is no use getting there earlier. We have to stay at the anchorage. We'd better take economic speed to save fuel consumption, OK?

S2: OK. I'll reduce the engine speed.

S1: Good. I am for you. By the way, how much fuel oil and diesel oil shall we bunker when we arrive at Singapore?

S2: We need 200tons of fuel oil and 150 tons of light diesel oil.

S1: Well, leave that to me, I'll inform the agent to deal with it. Is there any thing else

that we need to repair urgently?

S2: Nothing else.

Dialogue 3

(*In the engine room*)

4th/E: The auxiliary machinery is necessary for the safety of ships and the daily life of the crew. So it is important for us to be familiar with them and manage them properly.

Cadet: You are right. Please introduce the auxiliary machinery on board the ship.

4th/E: It is great in number. Please follow me. Lt's have a look at the pumps in the engine room. This is No.1 ballast pump. That is No.2 ballast pump. Besides, there are service pumps, fire pumps and so on.

Cadet: Can these pumps be taken the place of each other?

4th/E: Of course. They can also be substituted by the main sea water pump.

Cadet: What are the characteristics of these pumps?

4th/E: They are centrifugal pumps driven by motors. These are only some of the pumps on board. Pumps are not only great in number, but also of many kinds.

Cadet: What are the main kinds of pumps on board the ship?

4th/E: Besides the centrifugal pups, there are reciprocating pumps, vane pumps, gear pumps and screw pumps.

Cadet: Besides pumps, the auxiliary machinery includes many other kinds of equipment and machinery, doesn't it?

4th/E: Yes. Auxiliary machinery mainly refers to all equipment and machinery in the engine room other than the main engine, for example, the auxiliary boiler, the steering gear, the air conditioning system, the fresh water generator, the air compressor, the A.C. generator, such as the steering gear, the windlass, the winches, the cranes and the hatch covers, also belongs to auxiliary machinery. You will be gradually familiar with them.

Cadet: Yes, I will work hard on it.

Dialogue 4

(*In the Fourth Engineer's cabin*)

Cadet: Fourth Engineer, is it important for seamen to know the legislations and regulations?

4th/E: Yes. As a seaman, you should not only observe your mother country's laws and regulations, but also the international conventions and the local laws and regulations.

Cadet: Does the port authority carry out an inspection when we call at a foreign port?

4th/E: Yes.

Cadet: What inspection should be carried out?

4th/E: First, the frontier defense inspection station, immigration office and the quarantine office carry out the inspection. It is called the joint inspection. This inspection is to check all kinds of papers. It is a qualification inspection.

Cadet: What is the second?

4th/E: It is the PSC inspection, which inspects the safety condition of the emergency, lifesaving and anti-pollution appliances. The purpose is to review how the "three major international conventions" are observed.

Cadet: Is there a third inspection?

4th/E: Yes. It is an inspection to examine some machinery and equipment on board.

Cadet: What are the "three major international conventions" you mentioned just now?

4th/E: They are MARpOL73/78, SOLAS74 and STCW78/95.

Cadet: What organization issued these conventions?

4th/E: The international Maritime Organization. It is usually called IMO for short. Through learning, our will be clear about some detailed requirements. I hope you will be familiar with them as soon as possible.

Cadet: Yes, I will.

Words and Expressions

maintenance	['meɪntənəns]	*n.*	维修，维护，保养
machine	[mə'ʃi:n]	*n.*	[总称] 机器，机械
propeller	[prə'pelə]	*n.*	推进器，螺旋桨
shaft	[ʃɑ:ft]	*n.*	轴
auxiliary	[ɔ:g'zɪljərɪ]	*adj.*	辅助的，补助的
ventilation	[ˌventɪ'leɪʃn]	*n.*	通风，流通空气
refrigeration	[rɪˌfrɪdʒə'reɪʃn]	*n.*	冷藏，制冷，冷却
domestic	[də'mestɪk]	*adj.*	家庭的，生活用的
convention	[kən'venʃn]	*n.*	公约，条约，协议
cabin	['kæbɪn]	*n.*	舱室
revolution	[ˌrevə'lu:ʃn]	*n.*	转数
cylinder	['sɪlɪndə]	*n.*	汽缸
bore	[bɔ:(r)]	*n.*	镗孔
piston	['pɪstən]	*n.*	活塞
stroke	[strəʊk]	*n.*	冲程
cam	[kæm]	*n.*	凸轮
reversible	[rɪ'vɜ:sɪbl]	*adj.*	可倒转的，可反转的
scavenge	['skævɪndʒ]	*v.*	排除废气，清除（垃圾）

supercharger	['su:pətʃɑ:dʒə]	*n.*	对……增压
turbocharger	['tɜ:bəʊ,tʃɑ:dʒə]	*n.*	涡轮增压器
rotational	[rəʊ'teɪʃnl]	*adj.*	转动的
variable	['veərɪəbl]	*n.*	变量，变数
		adj.	可变的，不定的
indicator	[ɪndɪkeɪtə(r)]	*n.*	示功器
etc.	[et 'setərə]	*abbr.*	及其他，等等（=et cetera）
manoeuvre	[mə'nu:və(r)]	*v.*	机动操纵
		n.	机动
characteristic	[,kærəktə'rɪstɪk]	*adj.*	特有的，表示特征的
		n.	特性，特征
component	[kəm'pəʊnənt]	*n.*	部件，成分
liner	['laɪnə(r)]	*n.*	衬套
booster	['bu:stə]	*n.*	升压器
sump	[sʌmp]	*n.*	油底壳
deterioration	[dɪ,tɪərɪə'reɪʃn]	*n.*	变坏，退化，堕落
spindle	['spɪndl]	*n.*	心轴，轴，杆
sleeve	[sli:v]	*n.*	套筒，衬套
solenoid	['səʊlənɔɪd]	*n.*	螺线管，电磁线圈
ballast	['bæləst]	*n.*	压载物，压舱物
		v.	给……装压舱物
substitute	['sʌbstɪtju:t]	*n.*	代用品，代替者，替代品
		v.	替代，代替，取代
centrifugal	[sentrɪ'fju:gl]	*adj.*	离心的
reciprocate	[rɪ'sɪprəkeɪt]	*v.*	往复，来回
vane	[veɪn]	*n.*	叶片，翼，桨叶
emergency	[ɪ'mɜ:dʒənsɪ]	*n.*	紧急情况，突然事件，非常时刻，紧急事件
windlass	['wɪndləs]	*n.*	起锚机，卷扬机
winch	[wɪntʃ]	*n.*	起货机，绞车，卷扬机
crane	[kreɪn]	*n.*	起重机，克令吊
legislation	[,ledʒɪs'leɪʃn]	*n.*	立法，法规，法律
frontier	['frʌntɪə]	*n.*	国境，边境，边界
defense	[dɪ'fens]	*n.*	防卫，防御
immigration	[,ɪmɪ'greɪʃn]	*n.*	外来的移民，移居入境
quarantine	['kwɒrənti:n]	*n.*	检疫，隔离
qualification	[,kwɒlɪfɪ'keɪʃn]	*n.*	资格，条件
instrument	['ɪnstrəmənt]	*n.*	仪器，工具，手段，器械，器具
parameter	[pə'ræmɪtə]	*n.*	参数，参量
remote	[rɪ'məʊt]	*adj.*	遥远的，偏僻的，细微的

simulate	['sɪmjʊleɪt]	*vt.*	模拟，模仿
cadet	[kə'det]	*n.*	实习生
deck machinery			甲板机械
main propulsion equipment			主推进装置
shaft system			轴系
UMS			[缩] Unattended Machinery Space 无人机舱
rated power			额定功率
piston stroke			活塞冲程
crosshead-type			十字头式
double cam reversible			双凸轮转向
uniflow scavenge			直流扫气
connecting rod			连杆
bored injection oil-cooling technology			钻孔喷射油冷技术
thermal load			热负荷
combustion chamber			燃烧室
variable timed injector			可变定时式喷油器
electrical indicator			电子示功器
maneuvering condition			机动状态
fuel oil circulating pump			燃油循环泵
steam-tracing pump			蒸汽伴管
built-up type			组合式
fuel oil booster pump			燃油增压泵
spindle sleeve type			轴套式
solenoid valve			电磁阀
ballast pump			压载泵
service pump			通用泵
fire pump			消防泵
centrifugal pump			离心泵
reciprocating pump			往复泵
vane pump			叶片泵
gear pump			齿轮泵
screw pump			螺杆泵
fresh water generator			造水机
steering gear			舵机
hatch cover			舱盖
frontier defense inspection station			边防检查站
immigration office			移民局
quarantine office			卫生检疫局
joint inspection			联合检查

qualification inspection	资格检查
PSC inspection	[缩] Port State Control inspection 港口国监督检查
MARPOL	[缩] Marine Pollution Prevention Convention 船舶防污染公约
SOLAS	[缩] International Convention of the Safety of Life at Sea 国际海上人命安全公约
STCW	[缩] Standard of Training，Certification and Watchkeeping for Seafarers 海员培训、发证和值班标准国际公约
IMO	[缩] International Maritime Organization 国际海事组织
Central Control Room	集中控制室
Power factor indicator	功率因数指示仪
paralleling device	并电装置
disconnecting device	解列装置
parallel operation	并电操作
name plate	铭牌
local switch	机旁控制开关
confirming and cleaning device	确认和消除装置
simulated device	模拟设备

Useful Expressions

1. The main body of a ship is called the hull.
2. The ship is divided into three parts: the fore end, the mid-ship, and the after end.
3. The foremost part of a ship is called the bow and the rearmost part is called the stern.
4. Decks divide the hull horizontally and bulkheads vertically.
5. There are two departments on board. They are deck department and engine department.
6. The captain is in charge of the whole ship. He is responsible for the ship, her cargo and the safety of the crewmembers.
7. The ship is equipped with a main engine with a capacity of 20000 horse power.
8. It is the main engine that provides the driving power for the ship.

UNIT 2 COMMUNICATION WITH THE BRIDGE

Part A

Pre-reading

Read the following material and answer the questions.

Good communication between the engine room and the bridge is very important. Besides the operation of machinery during the voyage, when the ship is in port, if the engine department wants to do any work that may influence the properties of the machinery of the ship's safety, they must inform the bridge; while the ship is at sea, this communication is carried out regularly in the daily exchange report (noon report). It can also be done by means of telephone of telegraph in the engine room. The equipment should be used to make two departments work cooperatively when the main engine is on operation, turning on air, on stand-by or changing speed of direction. The equipment must be checked with the bridge for sure before every voyage.

Answer the following questions:

1. What may happen if the communication between the engine room and the bridge fails?
2. When do you need to communicate with the bridge?
3. What methods and ways can be used to communicate with the bridge?
4. Why do you think the records of the communication should be maintained?
5. Do you think English is very important during the communication? Why?

Part B

Speaking Tasks

Dialogue 1

S1: Hello. Chief engineer here, is that captain?

S2: Yes. Go ahead, please.

S1: We have to sail at low speed because of higher exhaust temperature of No.5 cylinder.

S2: How many revolutions do you want to reduce to?

S1: 108 rpm.

S2: OK, But you know we should reach the pilot station at 1800 tomorrow.

S1: Yes.

S2: So the speed should not be less than 105 rpm. Otherwise we have to wait for a whole night.

S1: See.

S2: If there is anything wrong, let me know at once. I'll be on the bridge.

S1: Yes. I'll arrange for everything.

Dialogue 2

S1: Hello. This is captain. Is chief engineer there?

S2: Hello. This is chief engineer.

S1: Our ship will start sailing at 1500 this afternoon. Stand by engine at 1400 o'clock.

S2: Yes, I see.

S1: Now, Please report the amount of oil remaining of board.

S2: Yes. Hold on, please. Let me check it.

S1: Well, don't worry.

S2: There are 2008 tons of fuel oil, 208 tons of diesel oil, 20800 liters of cylinder oil, 28000 liters of main engine lube oil, and 2008 liters of generator lube oil.

S1: All right. I know.

Dialogue 3

(*sailing in congested waters*)

2nd/O: Hello. Second officer here. Is that the duty engineer?

3rd/E: Yes, this is the Third Engineer.

2nd/O: The ship is sailing in congested waters. For the Sake of safety, please stand by the engine all the time. I have reported it to the Captain. He has informed the Chief Engineer.

3rd/E: Yes. I see. I'll get ready at once. Oiler, open the main starting valve.

Oiler: Yes.

C/E: Hello. Chief Engineer here. Is that the Third Engineer?

3rd/E: Hello. This is the Third Engineer.

C/E: I've been informed that the main engine will be on stand-by all the time.

2nd/O: Hello. Is that the Third Engineer? The Captain ordered to increase the main engine speed by 5 r/min in order to keep away from the ship in the same direction on our starboard.

3rd/O: Yes.

2nd/E: Watch out for the telegraph. Go at half speed.

3rd/O: Yes.

2nd/O: Go at sea speed.

3rd/E: Yes.

2nd/O: Ring off Engine.

3rd/E: Yes. Oiler, close the main starting air valve. Pay attention to the control air.

Oiler: Yes, I see.

Dialogue 4

C/E: Captain, we are going to inspect and clean the control boxes for the stand-by pumps of the main and auxiliary engines, and then give them the hand starting and automatic starting tests. To avoid damage to the equipment, the main engine must slow down while the tests are carried out.

Capt.: Our ship will pass through the English Channel. It is the congested water. You'd better carry out the tests the day after tomorrow.

C/E: OK.

(*two days later*)

Capt.: Chief Engineer, shall we slow down the main engine to give the stand-by pumps a starting test?

C/E: Yes, Captain. We are going to test the auxiliary engines this morning. So it is unnecessary to slow down the main engine for the time being. We are going to carry out the main engine test at 1500 o'clock. And then will slow it down. What do you think of it?

Capt.: All right. Go ahead!

2nd/O: Third Engineer, it is 1400 o'clock. Please stand by the main engine, get ready for slowing down and carry out the main engine test.

3rd/E: OK.

C/E: Second officer, the main engine is on stand-by. Please change over to the central control room. I will operate the main engine in the central control room to slow it down. Please notify the Caption.

2nd/O: Chief Engineer, the Captain is on the bridge. Now, you can slow down the main engine. How long will our ship sail at low speed?

C/E: About 50 minutes. I've reported it to the Captain.

2nd/O: I see.

(*50 minutes later*)

C/E: Captain, we've finished the test. Everything is correct.

Capt.: All right. Please restore the normal speed gradually.

Words and Expressions

communication	[kə,mju:nɪ'keɪʃn]	*n.*	传达，交通，通信
influence	['ɪnflʊəns]	*n.*	影响，感化，势力
		vt.	影响，改变
property	['prɒpətɪ]	*n.*	性质，特性
telegraph	['telɪgrɑ:f]	*n.*	车钟，电报机，电报