

新思维专门用途英语（ESP）系列教材

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实用航空航天英语

（教师用书）

Practical English for Aeronautics and Astronautics (Teacher's book)

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Unit 1

Part 1

Text 1

Pre-reading questions

1. Aeronautics refers to the flight and navigation activities of aircraft in the earth's atmosphere (air space), as well as its related scientific research and education, industrial manufacturing, public transportation, professional operations, aeronautics sports, national defense and military, government management and other fields.

依据第一篇课文第一段。

2. Civil aeronautics refers to all aeronautic activities other than national aeronautics activities such as military, police and customs, including public air transport and general aeronautics.

依据第一篇课文第四段。

Text 2

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

Part 2 Listening

- (1) Aeronautic
- (2) astronautic
- (3) unmanned
- (4) flying
- (5) movement
- (6) operation
- (7) civilian
- (8) exception
- (9) takeoff
- (10) landing

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据第一篇课文中 Each country has different regulations for general aeronautics, depending on whether it is private or commercial.
2. T 依据第二篇课文中 In accordance with the relationship or position of the spacecraft and the object of exploration, development and utilization, the space flight method includes flyby (passing by the celestial body), orbiting (flying around the celestial body), landing (landing on the celestial body), and return (leaving the celestial body and returning to the Earth).
3. T 依据第三篇课文中 Aeronautic technology is basically used to develop military aircraft, civil aircraft and aspirated engine, while astronautic technology is basically to develop unmanned spacecraft, manned spacecraft, carrier rocket and missile weapons.

II. Fill in each blank with the most appropriate word given below in its right form.

1. engage in
2. go far beyond
3. implication
4. lead to
5. utilize
6. reflect

III. Translate the following paragraph into Chinese.

从事飞行活动的飞行器，也称航空器，分为轻于空气的航空器和重于空气的航空器两类。前者依靠空气静浮力升空，如气球、飞艇等，后者依靠与空气作相对运动产生的空气动力升空，如飞机、直升机等。按照是否载人，可以分为有人机和无人机。

IV. Translate the following sentences into English.

1. The airline operates flights to 25 countries.
2. The towers are staffed by contract air traffic controllers at small airports that specialize in general aviation.
3. China has become the first country to land a spacecraft on the far side of the moon.
4. More than 750,000 have graduated from Space and Aviation Center, with many seeking employment in engineering, aviation, education, medicine and a wide variety of other professions.

V. Oral practice

(口语练习答案省略)

Unit 2

Part 1

Text 1

Pre-reading questions

1. Generally speaking, flight vehicles can be divided into three categories...The first is air vehicles or aircraft which fly in the air. The second is called spacecrafts or space vehicles which fly in the space. And rockets and missiles belong to the third type, they can fly both in the air and space.

依据第一篇课文第二段。

2. The distinction between a balloon and an airship is that an airship has some means of controlling both its forward motion and steering itself, while balloons are carried along with the wind.

依据第一篇课文第三部分“Air vehicles”下的内容第二段。

Text 2

- (1) A (2) D (3) F (4) C (5) E

Part 2 Listening

- (1) astronauts
- (2) orbit
- (3) technologies
- (4) spaceship
- (5) rocket
- (6) circular
- (7) assistance
- (8) separated
- (9) speed
- (10) envelope

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据第一篇课文第三部分“Air vehicles”下的内容，轻于空气的航空器依靠空气的静浮力升空飞行，重于空气的航空器使用相对于风运动的机翼产生的空气动力作为其升力。
2. F 依据第二篇课文第一段，无人机还是需要有一个在地面控制的飞行员操作驾驶。
3. F 依据第三篇课文第二段，在神州七号载人航天飞船之前，中国还分别发射了神州五号和神州六号载人航天飞船。

II. Fill in each blank with the most appropriate word given below in its right form.

1. be divided into
2. carry out
3. take advantage of
4. get acquainted with
5. be separated from
6. landed at

III. Translate the following paragraph into Chinese.

导弹仅在相对短暂的初始动力飞行阶段进行制导，其航向随后受轨道力学和弹道力学定律的支配。巡航导弹是一种制导导弹，旨在以高精度远距离发射大型弹头。现代巡航导弹可以以超音速或高亚速自导航飞行，并且可以在非弹道的极低高度轨迹上飞行。

IV. Translate the following sentences into English.

1. Rockets always have no guidance system, and especially in early times, there were no controlled rockets.
2. there are many kinds of air craft, for example, the transport aircraft, the military airplanes, the helicopters, the glider, the training airplanes, and so on.
3. A cluster of UAVs is of focal interest for its abilities to coordinate along with coverage of large areas, or cooperate to achieve goals such as terrain mapping.
4. The Shenzhou V manned spaceship is China's first manned spaceship developed on the basis of unmanned spaceship, and has the ability to carry out automatic return under emergency, the manually-controlled return, the return in the second or third day.

V. Oral practice

(口语练习答案省略)



Unit 3

Part 1

Text 1

Pre-reading questions

1. The four forces acting on a flying airplane are lift, weight, drag, and thrust.
依据第一篇课文第一段。
2. The principle relates the fluid pressure to its speed and elevation, and it can be explained through the conservation of energy. In short, it states that if the speed of a fluid increases, then either its static pressure must decrease to compensate, or its potential energy must decrease.
依据伯努利原理常识。

Text 2

- (1) D (2) E (3) F (4) A (5) B

Part 2 Listening

- (1) converting
- (2) compression
- (3) cylindrical
- (4) circular
- (5) aerodynamic
- (6) valves
- (7) tremendous
- (8) rotation
- (9) simultaneous
- (10) induction

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据第一篇课文中牛顿第三定律的表述及其对飞机飞行原理的实际应用。
2. F 依据第二篇课文中对两栖飞机外形及其功能的描述。
3. T 依据第三篇课文中对活塞式发动机的描述，活塞在气缸内要经过四冲程。

II. Fill in each blank with the most appropriate word given below in its right form.

1. utilized
2. provision
3. reciprocated
4. ignite
5. outstretched
6. essential

III. Translate the following paragraph into Chinese.

圆形的上表面增加了空气的速度，从而导致压力降低。随着机翼上方压力降低，其下方的相对压力会更高，从而产生压差即我们所知的升力。对于旋翼飞机，升力和推力都在垂直方向上，我们可以说升力是由空气在机翼顶部更快地移动而产生，但更具体而言，是它的压力降低而产生升力。

IV. Translate the following sentences into English.

1. How an airplane takes off is mainly based on Bernoulli's principle and Newton's third law.
2. According to Newton's law, when the wing pushes the air downward, the mass air will produce an upward thrust of equal magnitude and opposite direction, that is, lift.
3. Most airplanes consist of five main parts: wing, fuselage, tail, landing gear and power unit.
4. A piston engine, also called a reciprocating engine, is an engine that uses one or more pistons to convert high temperature and high pressure into a rotating motion.

V. Oral practice

(口语练习答案省略)

Unit 4

Part 1

Text 1

Pre-reading questions

1. No, it is not true. Runway is a paved land strip where land and take off aircrafts.
依据第一篇课文第三段。
2. The length of runway depends on various meteorological and topographical conditions.
依据第一篇课文第四段。

Text 2

- (1) E (2) C (3) A (4) B (5) F

Part 2 Listening

- (1) day-to-day airport operations
- (2) optimizing
- (3) collaborative
- (4) irregular
- (5) contingency
- (6) airport layout
- (7) baggage-delivery devices
- (8) command-and-control positions
- (9) operational supervision
- (10) real-time risk management

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 依据第一篇课文中对机场塔台基本情况的描述。

2. F 依据第二篇课文中对机场路侧功能的介绍。
3. T 依据第三篇课文中对机场运控中心内飞行区运行数据库的概述。

II. Fill in each blank with the most appropriate word given below in its right form.

1. integrate
2. optimal
3. infrastructure
4. implement
5. obstruction
6. chaos

III. Translate the following paragraph into Chinese.

滑行道的铺设方式应能提供尽可能短的路径，并防止干扰到已降落的飞机滑向停机坪或者起飞滑跑的飞机滑向跑道。应适当关注跑道与滑行道的交叉口，因为在转弯操作时，该部分会承受高强度载荷，如果滑行道道面强度弱于跑道，飞机则可能会从滑行道上掉下来。

IV. Translate the following sentences into English.

1. The length of the runway depends on the takeoff and landing distance of the largest aircraft that can be used, altitude and temperature.
2. It is better for the aircraft to take off and land against the wind, and excessive crosswinds will prevent the aircraft from taking off and landing.
3. Traffic Handling Services are also called ground operations, which are directly related to traffic volume, including passenger, luggage or cargo transportation.
4. The airport operation center (AOC) is the nerve center of the airport operation, and its important responsibilities involve the organization, command, coordination, control and emergency rescue of the airport operation.

V. Oral practice

(口语练习答案省略)

Unit 5

Part 1

Text 1

Pre-reading questions

1. An Airline is an organization that owns and operates many aircraft, which are used for carrying passengers and cargo to different places.
依据第一篇课文第二段。
2. They have the same operating model, but there are two points of differences. First, the fare rates of Low Cost Carrier are lower than Full Service Carrier's. Second, Low Cost Carrier is minimal on board services, customers are required to pay for food, drinks, or other consumable stuff. While Full service is given to the customer on Full Service Carrier. Food is not on sale but the ticket price is inclusive of the price for food.
依据第一篇课文第四、五段。

Text 2

- (1) F (2) C (3) A (4) B (5) E

Part 2 Listening

- (1) convenient
- (2) aviation
- (3) boasts
- (4) safety precision
- (5) full-service carrier
- (6) product ratings
- (7) beverage service
- (8) comply with
- (9) low-cost carriers
- (10) complimentary stations

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据处理乘客的方式第二点关于特殊乘客处理办法。
2. T 根据第二篇课文第一部分，第九段“汉莎航空”（Lufthansa）部分的介绍
3. F 依据第三篇课文的导入部分的内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. spanning
2. audit
3. make up for
4. launched
5. prestigious
6. designated

III. Translate the following paragraph into Chinese.

低成本航空公司是指提供更低票价和更少舒适的航空公司。这些航空公司是廉价航空公司。他们通过出售食物或优先登机来弥补机票所承担的损失。所有的廉价航空公司都在舒适和服务方面降低成本。它们的票价总是比传统的票价低。低成本旅行公司的目标客户是紧急旅行者和预算旅行者，他们大多关注价格。

IV. Translate the following sentences into English.

1. The aircraft recovery problem aims to recover these flight schedules through a series of reassignments of aircraft to flights, delaying of flights and cancellations of flights.
2. It emphasizes the application of economic models of demand, pricing, costs, and supply to airline markets and networks, and it examines industry practice and emerging methods for fleet planning, route network design, scheduling, pricing and revenue management.
3. Comprehensive competitiveness of an airline is determined by operating scale, operations management, airline network, service quality and a high safety level.
4. Unlike a number of low-cost carriers, these airlines have all passed the stringent International Air Transport Association Operational Safety Audit (IOSA) and have excellent safety records.

V. Oral practice

(口语练习答案省略)

Unit 6

Part 1

Text 1

Pre-reading questions

1. No. it is false. A general aviation airport is certainly a civil aviation airport.
依据第一篇课文第四段。
2. A balance between public and private transportation must be achieved to permit all types of people the freedom of choice and movement.
依据第一篇课文第十五段。

Text 2

- (1) E (2) A (3) F (4) D (5) C

Part 2 Listening

- (1) classifies
- (2) commissioned
- (3) outline the challenges
- (4) decline
- (5) comprehensive
- (6) available
- (7) annual
- (8) demographic
- (9) general aviation
- (10) supporting

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 根据第一篇课文，part1 第十二段可知。
2. F 依据第二篇课文第一部分II.Sport aviation in Australia 部分最后一段。
3. F 依据第三篇课文的第一部分的关于通用航空（General Aviation, CA）定义的内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. identified
2. a range of
3. leveled
4. encompassing
5. proportionally
6. commercial

III. Translate the following paragraph into Chinese.

民航机场是划定的区域，包括辅助建筑、设施和设施，用于民航飞机的起飞、着陆、滑行、停车和其他活动。民航机场分为通航机场和公共交通机场。

通用航空机场当然是民航机场。但承担更多的其他任务，如公务旅行、航空旅行、气象探测、农林喷洒、消防巡逻、空中救援等特殊任务。

IV. Translate the following sentences into English.

1. Civil aviation refers to the use of aircraft for aviation activities other than national aviation activities such as defence, police and customs.
2. It analyzes the amphibious aircraft market by aircraft type including fixed wing and rotary wing aircraft. Along with it the report provides an in-detailed market size analysis of the amphibious aircraft based on end use including civil aviation, general aviation, and military aviation.
3. Many aircraft designers and kit manufactures within the sport aviation industry use wood as a primary structure.
4. The purpose of this project is to examine the Civil Aviation(CA)industry in America, and outline the challenges facing the CA industry and opportunities to respond to those challenges.

V. Oral practice

(口语练习答案省略)

Unit 7

Part 1

Text 1

Pre-reading questions

1. civil aviation refers to the use of various aircraft to engage in aviation activities, which is generally divided into commercial aviation (air transport) and general aviation. Commercial aviation means commercial passengers and cargo transport by aircraft. General aviation includes aviation operations and other types of general aviation, including industrial aviation, agricultural aviation, aviation research, etc.
2. Open answer (It is suggested to discuss the topic from the birth of first Chinese-made aircraft to the historical events taking place in different stages such as the initial stage, the development process, the current stage of rapid development)

Text 2

- (1) F (2) E (3) A (4) D (5) B

Part 2 Listening

- (1) shipped
- (2) delivery
- (3) operates
- (4) carrying
- (5) serve as
- (6) mean
- (7) unloaded
- (8) sorting
- (9) price-sensitive
- (10) inherently

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 依据第一篇课文导入部分第三句内容。
2. F 依据第二篇课文第六段有关于飞机经济舱相关内容。
3. F 依据第三篇课文第二段第六句内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. delivery
2. Aviation
3. embarking
4. mean
5. flights
6. access

III. Translate the following paragraph into Chinese.

中国民航管理局表示，为充分发挥数字技术，民航局将“智能”概念和技术融入十四五（2021-2025 年）的行业增长中，并通过将新一代数字技术融入整个产业中去，使整个行业包括航空旅行、航空物流、通关到行业运营和监管，都变得智能。数字技术将通过节省燃料成本和工资、削减运营和维护成本、提高安全和乘客体验，极大地提高航空公司的盈利能力和市场表现。

IV. Translate the following sentences into English.

1. Civil aviation industry is the basic industry of national economic development, and is closely related to tourism, commerce and trade, logistics and other industries.
2. Although the aircraft itself was based on outdated and inefficient technology, resulting in its project's early cancellation, the Y-10 has nonetheless solidified the resolve of China to develop its own large passenger jet program.
3. With the overall improvement of domestic urbanization level, resident consumption and civil aviation service level, China's civil aviation passenger transport market has developed rapidly.
4. Air cargo transportation is an indispensable way to the transport of valuables, fresh goods and precision instruments in international trade. It has greatly shortened the delivery time of trade and won the market with the characteristics of speed, safety and punctuality.

V. Oral practice

(口语练习答案省略)

Unit 8

Part 1

Text 1

Pre-reading questions

1. Main disciplines: transportation engineering, aerospace science and technology
Core courses: Aircraft Basic knowledge; Flight Principles; Flight Performance Planning and Load Balance; Flight Navigation; Aviation Meteorology; Instrument Flight and Aeronautical Charts; Aviation Regulations; Pilot Radio Land-air Communication; Flight English; Airline Transport Pilot License Theory Courses; Airline Transport Pilot Flight Training Courses.
2. Graduation Criteria
 - 1) To meet the required knowledge, ability, and quality requirements of the profession;
 - 2) To complete all the teaching links specified in the training program, with a total credit score of not less than 173;
 - 3) To obtain at least 6 credits of national defense education.

Text 2

- (1) C (2) A (3) F (4) D (5) E

Part 2 Listening

- (1) actual
- (2) completed
- (3) strict
- (4) correctly
- (5) technology
- (6) geography
- (7) consists
- (8) relevant
- (9) recognized

(10) crew

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据第一篇课文第三部分“飞行技术专业人才培养方案”(Introduction of Flight Technology)中的第五点学制与学位, 学年应为五年。
2. T 依据第二篇课文的第五段第一句话。
3. T 依据第三篇课文的第三段第一句话。

II. Fill in each blank with the most appropriate word given below in its right form.

1. implementation
2. professionalism
3. remedial
4. relatively
5. carry out
6. qualified

III. Translate the following paragraph into Chinese.

要求学生思想素质好, 基础扎实, 实践能力强, 适应经济社会发展需要, 具备航空飞行专业所需的政治、心理和身体素质, 具有航空器结构方面的专业知识和能力。和飞机维修, 掌握民航和通用航空的基本知识。 这些素质是为从事民用航空和通用航空领域飞机飞行岗位的应用型高级专业人才培养的。

IV. Translate the following sentences into English.

1. Students must complete all the courses specified in the flight technology teaching plan within the prescribed length of study. Only those who pass the examination can be awarded a Bachelor of Engineering.
2. My country's flight licenses are divided into three categories: one is private pilot license (private license), the second is commercial pilot license (commercial license), and the third is airline transport pilot license (airline license).
3. Every graduate of flight major should meet the requirements of basic knowledge, basic theory and basic quality.
4. Of course, as a future Chinese captain, the training received is very strict.

V. Oral practice

(口语练习答案省略)

Unit 9

Part 1

Text 1

Pre-reading questions

1. No definite answer. But it is suggested to shop the flight insurance when you travel by air since although the chances of flight accidents are slim, but with the extensive coverage offered by flight travel insurance plans, you can be stripped of all worry -- whether of being injured or losing your bags.
依据第二篇课文第 2 段。
2. No, it is not true. Apart from loss of life, sight, or limbs from an accident or injury that occurs during a flight, many flight insurance plans also provide additional trip-related benefits such as: Trip Delay, Baggage & Personal Effects, Baggage Delay (12 hours), Emergency Medical & Dental Expense, Emergency Medical Evacuation/Repatriation etc.
依据第二篇课文第 3 段。

Text 2

- (1) F (2) B (3) E (4) A (5) D

Part 2 Listening

- (1) the cabin
- (2) duty-free goods
- (3) cabin attendants
- (4) pre-flight
- (5) aboard
- (6) fire extinguishers
- (7) carry-on luggage
- (8) Demonstrating
- (9) face-to-face
- (10) warm concern

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 依据第一篇课文最后一部分“航班取消条件”(Provisions for Flight Cancellation)内容。
2. F 依据第二篇课文的第8段“如果违法或危害乘客的安全……”(If you are, of course, caught breaking any law or threatening passengers' safety...).
3. F 依据第三篇课文的“乘务组”(Cabin crew)职责的最后一点内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. affordable
2. customize
3. reassured
4. be entitled to
5. beverage
6. courteous

III. Translate the following paragraph into Chinese.

长期旅游保险也有些类似。这类保险涵盖的旅行时间较长，期限从3个月到18个月不等。在这种情况下，由于停留时间过长，旅客不会安排返回日期。有些人担心这会使他们在购买回程票时难以保留保险，但购票不会影响保单。

IV. Translate the following sentences into English.

1. You may wish to compare the terms of this policy with your existing life, health, home, and automobile insurance policies.
2. During security checks, please show your boarding pass and valid ID card to the security personnel.
3. It is the cabin crew's duty to check whether all passengers' safe belts have been secured prior to take-off.
4. Settlement of claims will be based on the type of policy you opt for.

V. Oral practice

(口语练习答案省略)



Unit 10

Part 1

Text 1

Pre-reading questions

1. weather plays a significant role in a number of aviation accidents and incidents. Based on the National Transportation Safety Board (NTSB) reports that most commonly find human error to be the direct accident cause, weather is a primary contributing factor in 23 percent of all aviation accidents. The total weather impact is an estimated national cost for accident damage and injuries, delays, and unexpected operating costs.
2. Non-convective turbulence and Clear-air turbulence.

Text 2

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

Part 2 Listening

- (1) dynamical
- (2) derived from
- (3) water cycle
- (4) observations
- (5) innovations
- (6) make huge advances in
- (7) at the core of
- (8) empirical knowledge
- (9) predictions
- (10) evolved

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T text 1 第三段。
2. F Text 2 第 1 段
3. T listening 第三段

II. Fill in the blanks with the most appropriate word given below in its right form.

1. visibility
2. maintenance
3. electromagnetic
4. polarized
5. anecdotal
6. meteorology

III. Translate the following paragraph into Chinese.

机翼和操纵面上的结构结冰会增加飞机重量，降低升力，产生虚假的仪表读数，并影响飞机的控制。化油器、发动机进气口和燃料电池中的机械结冰会损害发动机性能，导致功率降低。小型飞机通常在温度和云层最有利于结冰的高度运行，这使得这些飞机很容易长时间结冰。大型飞机主要在从航站楼区域上升和下降时面临风险。

IV. Translate the following sentences into English.

1. clear air turbulence, low altitude wind shear, poor visibility and so on still threaten the safety of flight, which has become an urgent problem to be solved in modern aviation meteorology.
2. The Meteorological radar determines the position and characteristics of the target by the reflection of the radar wave.
3. The all-weather flight system still needs to adjust the working state of the system according to the actual atmospheric conditions, and the requirements for meteorological data are higher during takeoff and landing.
4. Meteorology is a subject that takes the atmosphere as the research object and explains the characteristics of the atmosphere from both qualitative and quantitative aspects, focusing on the weather conditions and change laws of the atmosphere and weather prediction.

V. Oral practice

(口语练习答案省略)

Unit 11

Part 1

Text 1

Pre-reading questions

1. The Convention is concluded in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically.
依据第一篇课文前言部分。
2. The aims and objectives of the Organization are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to:
 - (a) Insure the safe and orderly growth of international civil aviation throughout the world;
 - (b) Encourage the arts of aircraft design and operation for peaceful purposes;
 - (c) Encourage the development of airways, airports, and air navigation facilities for international civil aviation;
 - (d) Meet the needs of the peoples of the world for safe, regular, efficient and economical air transport;
 - (e) Prevent economic waste caused by unreasonable competition;
 - (f) Insure that the rights of contracting States are fully respected and that every contracting State has a fair opportunity to operate international airlines;
 - (g) Avoid discrimination between contracting States;
 - (h) Promote safety of flight in international air navigation;
 - (i) Promote generally the development of all aspects of international civil aeronautics.依据公约第四十四条。

Text 2

- (1) E (2) C (3) B (4) F (5) A

Part 2 Listening

- (1) Civil Aviation
- (2) landmark
- (3) routes
- (4) Subsequent to
- (5) Chicago
- (6) global
- (7) organization
- (8) representatives
- (9) ratifications
- (10) air transport

Part 4 Exercises

I. Tell whether the following statements are true or false.

- 1. T 依据第一篇课文第四十九条第三点的内容“三、审查理事会各项报告，对报告采取适当行动，并就理事会向大会提出的任何事项作出决定。”
- 2. T 依据第二篇课文第四条的第二句：“国家扶持民用航空器制造业的发展，为民用航空活动提供安全、先进、经济、适用的民用航空器。”
- 3. F 依据听力课文第三段的第一句的内容：“The Second World War was a powerful catalyst for the technical development of the aero plane.”此处题干中“The First World War was a powerful catalyst for the technical development of the aero plane.”是错误的。

II. Fill in each blank with the most appropriate word given below in its right form.

- 1. adequate
- 2. subsequent to
- 3. enact
- 4. on behalf of
- 5. soundly
- 6. exclusive

III. Translate the following paragraph into Chinese.

本组织的永久地址应由 1944 年 12 月 7 日在芝加哥签订的国际民用航空临时协定所设立的临时国际民用航空组织临时大会最后一次会议确定。本组织的地址经理事会决议

可以暂迁他处。

IV. Translate the following sentences into English.

1. Each contracting State agrees not to use civil aviation for any purpose inconsistent with the aims of this Convention.
2. Decisions by the Council shall require approval by a majority of its members.
3. A register of the rights of civil aircraft shall be maintained by the competent civil aviation authority under the State Council.
4. The ‘Chicago Convention’, this landmark agreement laid the foundation for the standards and procedures for peaceful global air navigation.

V. Oral practice

(口语练习答案省略)

Unit 12

Part 1

Text 1

Pre-reading questions

1. The airplane, one the great inventions of the 20th century, has certainly changed the nature of warfare forever. The first true military airplanes were deployed in the early days of World War I.

依据 Text 1 课文中的第 2-3 段。

2. Aviation technology advanced rapidly in the interwar period, and military aircraft became increasingly capable. Many combat aircraft today have a multirole ability.

依据 Text 1 课文第 12 段 Role of the Aircraft。

Text 2

- (1) B (2) F (3) E (4) C (5) A

Part 2 Listening

- (1) inheritance
- (2) accelerate
- (3) implementation
- (4) coordinated
- (5) supporting
- (6) systematic
- (7) Based on
- (8) mature
- (9) carried out
- (10) ideology

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 依据第一篇课文第四部分“二战时期军事航空是如何发展的？”(Following the Second World War, How Has Military Aviation Advanced?)下“飞机的作用”(Role of the Aircraft)部分的第二句内容。
2. F 依据第二篇课文的第三部分飞机类型“军用海上巡逻机”(Military Maritime Patrol Planes)下第二段第一句话的内容。
3. T 依据第三篇课文的“新时期通用航空军民融合发展的意义”(The Significance of the Military and Civilian Integration Development of the General Aviation Industry in the New Era)部分的第一、二两点内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. modifying
2. based on
3. advanced
4. innovation
5. promote
6. defense

III. Translate the following paragraph into Chinese.

夜鹰将战斗机的作用与地面攻击相结合，是世界上第一架专门设计用于利用隐形技术的作战飞机。隐身（低可观测）技术被用来降低飞机的可视性，这样飞机就可以在不被发现的情况下运行。虽然并非完全无法被雷达探测到，但夜鹰是一个难以定位的目标，只有一只夜鹰在敌对行动中丧生。

IV. Translate the following sentences into English.

1. Military aviation is the use of military aircraft and other flying machines for the purposes of conducting or enabling aerial warfare, including the national airlift (air cargo) capacity to provide logistical supply to forces stationed in a theater or along a front.
2. In modern military aircraft, complexity of information combined with time stress creates difficulties for the pilot under combat conditions.
3. Usually a fixed-wing airplane, multirole airplanes can accommodate more than one task, including fighting and bombing capabilities.
4. The military and civilian integration development of general aviation industry can effectively solve the problems of streamline administration and institute decentralization

with slow pace and low operational efficiency, which is represented by the low-altitude airspace reform.

V. Oral practice

(口语练习答案省略)

Unit 13

Part 1

Text 1

Pre-reading questions

1. The USS Langley (CV-1) is the first aircraft carrier under the command of the United States Navy.
2. The USS Enterprise (CVN 65).

Text 2

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

Part 2 Listening

- (1) vessel
- (2) battleship
- (3) flight deck
- (4) fleet
- (5) airfield
- (6) Catapults
- (7) superstructure
- (8) armored
- (9) launched
- (10) equipped

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 参考第一篇课文第六段内容。
2. F 参考第二篇课文第三段内容。

3. T 参考第三篇课文第一段内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. commissioned
2. displacement
3. optimized
4. resemble
5. airspeeds
6. visual

III. Translate the following paragraph into Chinese.

美国游骑兵号（CV 4）于 1934 年服役，是美国海军第一艘从龙骨向上设计和建造的航空母舰。她的排水量为 14500 吨，长度为 769 英尺，以 29.3 节（33.7 英里每小时）的速度行驶，并在建造时支持了 2461 人。在她的最大承载能力下，她携带了 86 架飞机，并配备了 3 个电梯和 3 个弹射器。

IV. Translate the following sentences into English.

1. Initially used for flight and training, the Langley was commissioned to provide air cover and maritime reconnaissance for battleships.
2. The Nimitz-class nuclear-powered aircraft carrier is the largest warship ever built. The CVN72 ~ CVN76 class has a full displacement of 102,000 tons and is 332 meters long.
3. The Aircraft carrier Shandong, the main home-made aircraft carrier of the People's Liberation Army Navy, was officially launched on April 26, 2017.
4. After World War II, aircraft carriers became the dominant combat vessel of the war.

V. Oral practice

(口语练习答案省略)

Unit 14

Part 1

Text 1

Pre-reading questions

1. The first Chinese Astronaut was Yang Liwei. He was launched on Shenzhou 5 on October 15, 2003.
2. The three major space launch bases in China are Jiuquan, Taiyuan and Xichang.

Text 2

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

Part 2 Listening

- (1) all-time
- (2) forecasting
- (3) injecting
- (4) globe
- (5) dedicated
- (6) joins hands
- (7) comprised of
- (8) enriched
- (9) orbits
- (10) signals

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 参考第一篇课文第四段内容。
2. T 参考第二篇课文第三段内容。

3. T 参考第三篇课文 “Main Composition of the BDS” 部分的内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. man-made
2. spacecraft
3. dock with
4. monitoring
5. hybrid
6. formulated

III. Translate the following paragraph into Chinese.

截至 1998 年，中国研制的用于商业太空飞行的长征系列运载火箭包括长征 1 号、长征 2 号、长征 2C 号、长征 3 号、长征 4 号和长征 E 号。该系列火箭成功发射了一系列应用于科学探索和技术实验、遥感、气象、电信和广播等领域的卫星。

IV. Translate the following sentences into English.

1. One of the goals of China's manned space program is to build a permanent space station.
2. China is also one of the few countries capable of launching geostationary satellites, as well as launching more multiple satellites with only one rocket.
3. In December 2013 the Chang'e-3 realized the first soft landing on the surface of the moon.
4. China upholds the principles of "independence, openness, compatibility and gradualness" in the BDS construction and development.

V. Oral practice

(口语练习答案省略)



Unit 15

Part 1

Text 1

Pre-reading questions

1. We measure long distances in space in “light-years”, representing the distance it takes for light to travel in a year (roughly 5.8 trillion miles, or 9.3 trillion kilometers).

依据第一篇课文第一部分第二段。

2. Stars are immense balls of gas that produce their own radiation. Planets are objects that orbits the sun, are massive enough to have nearly round shapes, and have cleared their orbits of debris. Asteroids are rocks that are not quite big enough to be dwarf planets. We’ve even found asteroids with rings around them.

依据第一篇课文第一部分第三点。

Text 2

- (1) F (2) B (3) A (4) C (5) E

Part 2 Listening

- (1) launch
- (2) abort
- (3) parachute
- (4) astronauts
- (5) capsule
- (6) autonomous
- (7) propellant
- (8) panel
- (9) convert
- (10) asteroid

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. F 依据第一篇课文第一部分“认识太空”（Knowledge About Space）第二段第 3、4 句的内容。
2. F 依据第二篇课文的第二部分“商业航天业的发展”（The Developing Commercial Spaceflight Industry）第二段内容。
3. T 依据第三篇课文的第 5 段内容。

II. Fill in each blank with the most appropriate word given below in its right form.

1. startups
2. altitude
3. invisible
4. missile
5. module
6. distorted

III. Translate the following paragraph into Chinese.

恒星是一种自身能产生辐射的巨大气体球。它们的范围从红色超级巨星到冷却的超新星剩余物白矮星，或者当大恒星燃烧耗尽气体时发生的恒星爆炸物体。恒星爆炸同时会产生非常密集的物质，被称为中子星。如果这些中子星发出辐射脉冲，它们就被称为脉冲星。

IV. Translate the following sentences into English.

1. When humans send a satellite to the space close to vacuum, the object will not encounter “drag” in the same way that an airplane does as it sails through space.
2. The stars are radiators of vast power and their explosions spread elements throughout the universe, which is the reason that elements such as iron exist.
3. Investors have put more than \$25 billion into makers of satellites, rockets and other space innovations since 2009, according to a report published Tuesday by a space tourism company.
4. Orion’s service module can supply the spacecraft with the electricity, propulsion, thermal control, air and water it needs in space.

V. Oral practice

(口语练习答案省略)

Unit 16

Part 1

Text 1

Pre-reading questions

1. In terms of human safety, commercial manned flight is very different from government manned space programs. The government's manned space program is taxpayer-funded, and the astronauts are on a national mission, so everything must be safe. But in commercial space, tourists buy tickets at their own expense and are prepared to take risks. According to the standard of commercial aviation, tourists, pilots and flight attendants live and die together, sharing the risk of accidents, and insurance companies set up insurance. Commercial space tourism projects, therefore, have a higher risk tolerance than government manned space missions. It doesn't take a single mission failure to have a devastating impact on the entire market.

依据 Text 1 课文中的第 3 段。

2. Space tourism is the new space. Space tourism will be commercial in nature and the growth and development of space tourism will be defined by the needs of tourists. Space tourism is affordable and no effort will be spared to seek safe reuse. Space tourism is a comprehensive security guarantee, and will form comfortable and safe tourism services similar to civil aviation, as well as new business forms such as space tourism insurance.

依据 Text 1 课文中的第 6 段。

Text 2

- (1) E (2) C (3) D (4) F (5) A

Part 2 Listening

- (1) military
- (2) navigation
- (3) remote
- (4) industry

- (5) obstacles
- (6) laws
- (7) gold
- (8) weight
- (9) agriculture
- (10) microwaves

Part 4 Exercises

I. Tell whether the following statements are true or false.

1. T 依据第一篇课文第二部分第四段（In the foreseeable future... transportation.）部分的第二句内容。
2. F 依据第二篇课文的第一部分（In the Joint Guidelines...November 27, 2006...space support）下第二段第二句话的内容。
3. T 依据第三篇课文第五部分最后一句话（In addition...21st century.）

II. Fill in each blank with the most appropriate word given below in its right form.

1. astronauts
2. risk
3. military
4. prevention
5. limited
6. energy

III. Translate the following paragraph into Chinese.

太空旅游是新的空间。太空旅游将具有商业性质，太空旅游的增长和发展将取决于游客的需求。太空旅游是负担得起的，我们将不遗余力地寻求安全的再利用。太空旅游是一项全面的安全保障，将形成类似民航的舒适、安全的旅游服务，以及太空旅游保险等新业态。

IV. Translate the following sentences into English.

1. The government's manned space program is taxpayer-funded, and the astronauts are on a national mission, so everything must be safe.
2. On the basis of space tourism in low Earth orbit, lunar tourism will soon develop.
3. Space power includes the capabilities necessary to attain and maintain a desired level of superiority in space.
4. The solar energy generated from space will be more than 10 times more efficient than the

solar energy generated from earth because it will not be affected by night, atmosphere, clouds and rainy days.

V. Oral practice

(口语练习答案省略)

