

民航英语工程系列教材

# 民航公共英语教程

A GENERAL ENGLISH COURSE  
OF CIVIL AVIATION

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# 民航英语工程系列教材

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## 前 言

《民航公共英语教程》(中级)是为配合民航总局实施的英语工程所编写的系列教材之一。

全书共有二十课,每一课由课文、生词、注释、词汇学习、语法和练习组成。

课文绝大部分选自英美原版书刊,突出民航特色,题材形式多样。课文内容涉及民航教育,卫星导航,机场安全,模拟技术,质量跟踪,跑道照明,红外除冰等。本书选材知识性和趣味性并重,有利于开阅读者的视野和提高读者的学习兴趣。另外,在编写时作者尽量兼顾到语言学习的规律和英语工程考试的具体要求,使本教程循序渐进、体例完备,同时在习题设计上与考试题型保持一致。

本教程编写体例如下:

1. 课文。
2. 生词:包括注音、词性和汉语注释。
3. 课文注释:包括难句的译文和解释、缩略语、典故、背景知识等。
4. 词汇学习:包括词性、英汉双解、例句和常用搭配。
5. 语法:包括讲解和例句。
6. 练习:包括与课文理解有关的多项选择题、词汇及语法多项选择题、改错、完型填充和阅读理解等。

本书初稿写成后,民航学院前任副院长刘得一先生通读了初稿,并进行了认真的修改和审校,避免了一部分错误。对他广博的学识和认真负责的态度,作者深表钦佩和感谢。

作者还要感谢北京民航管理干部学院的张连仲老师和中国民

航出版社的领导和编辑，他们在本书的成书过程中给予作者以多方面的帮助。

由于这是民航实施英语工程后首次编写教材，时间比较仓促，书中难免有疏漏和不足之处，希望专家和读者提出宝贵意见，以便日后完善。

编 者

1997 年 3 月

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# **Lesson One**

## **Text**

### **Airplanes and How They Fly**

Certain laws of nature are utilized in flight. The first requirement is the appropriate flying shape, or airfoil, which is commonly called the wing. This is shaped like a flattened teardrop. The rounded front edge is called the leading edge, and the tapering rear edge is called the trailing edge. The aircraft is supported by the earth's atmosphere. What we think of as air is really a mixture of gases that have mass and weight but no shape.

The forces that act on the airplane in flight are weight, lift, thrust and drag. Weight refers to the force of gravity that acts on the plane and everything in it. In order to fly, the plane must create a force stronger than the force of its own weight. This is called lift. The lift is produced by the movement of the air around the wing as the plane moves through it. When the wing moves through the air quickly, a low pressure area vacuum is created on top of the wing, and a high pressure or normal area is created under the wing. It is like a cushion of air on which the plane rests and stays aloft during flight. An airplane propelled by the thrust of its jet engines can be thought of as flying on this cushion of air. Drag is the total resistance of the air to the aircraft passing through it. It may occur when the wing moves through the air to

create lift, or it may occur when the landing gear is lowered.

The pilot has controls that enable him to operate the plane as it moves through the air. He can cause it to ascend, descend, or remain level. He can also make turns in the air. This is called banking. The controls utilize the forces of the air by making slight adjustments or changes in the wings or the tail. When the flaps—the hinged sections of the wing—are raised or lowered by the pilot, they can cause the aircraft to increase lift, decrease landing speed, and so forth. Similarly, changes in the tail of the aircraft cause the plane to turn to the right or the left.

Weather and atmospheric factors also affect flight. A headwind, or wind blowing against the nose of the plane, will decrease speed. A tailwind will have the opposite effect. Altitude also affects flight. There is a huge river of wind that circles the globe generally from west to east at anywhere from 25,000 to 50,000 feet above the surface of the earth. This is called the jet stream. As much as two hundred miles an hour may be added to the speed of a plane flying west to east within the jet stream.

While today's airlines utilize many different kinds of aircraft—manufactured by a number of different companies in the aeronautical industry—there are standard features common to all. Some of the smaller airlines may still use propeller aircraft, but the international airlines use jet planes on almost all their flights.

Many planes are identified by manufacturing company and model number in a kind of code that identifies the size, type of plane, passenger capacity, and other information. For example, the Boeing 707 is a medium-sized jet aircraft. It can carry up to 177 passengers and has four engines. Its cruising speed is 575

miles per hour, and the maximum operating range is 5,680 miles. It flies at an altitude of 25,000 to 40,000 feet and has two galley complexes, one each for first-class and economy passengers. There are also two smaller or auxiliary galleys. There is a lounge for first-class passengers in the forward section of the aircraft.

Smaller than the 707 is the Boeing 727, which is used primarily for short-range flights. The 727 carries up to 128 passengers, has three engines, and cruises at a speed of 575 miles per hour. The operating range is 2,450 miles at altitudes from 25,000 to 42,000 feet. It has one galley with several smaller additional work areas and a service bar.

The largest of all jet aircraft operating today is the Boeing 747. It is often referred to by passengers as a "jumbo" jet, but this term is disliked by most airlines since it connotes clumsiness, and the 747 is anything but clumsy. It can carry 366 passengers in a normal configuration (that is, with both first-class and economy sections), or up to 490 passengers in an all-economy configuration for a charter flight. It has four engines and a cruising speed of 625 miles per hour. The operating range is 6,000 miles, and the operating altitude is 25,000 to 45,000 feet. The 747 is so large that just the fuel it carries weighs as much as a fully loaded 727. The 747 has six galleys, three auxiliary galleys, and twelve lavatories. There is also an upstairs lounge and bar for first-class passengers. Many airlines have made modifications in the interior of the 747 to provide greater luxury and comfort for their passengers.

Other popularly-used American-made aircraft are the McDonnell Douglas DC-8 and DC-10 and the Lockheed Tristar 1011. The DC-10 and the Tristar are both "jumbo" jets, though

not quite as large as the 747. Other jet aircraft on international routes are the British-made Comet and the Russian-made Ilyushin.

There are certain features that apply to both medium-and long-range planes. The fuselage, or body of the plane, consists of the flight deck, where the pilot and the rest of the flight crew work, and the cabin, or passenger section of the aircraft. The cabin is divided into two sections, the forward one for first-class passengers and the rear one for economy passengers. There is a partition called a bulkhead between the two sections. It is movable, so that it can be moved forward or backward to provide the proper number of seats in each class of service on a given flight. Another bulkhead separates the flight deck from the cabin. The partition separating the galley from the rest of the cabin is also called a bulkhead.

There are more economy than first-class passengers on any given flight, although in certain circumstances, such as charters or other special flights, an entire plane may have one class of service. The seats in first class are larger and spaced farther apart than in economy class. In the latter, passengers may be seated three across on flights that are completely booked.

The pattern of seats, cargo partitions, and other items that are specified for a particular airplane, flight, or type of service is called the configuration. There is usually a seating chart with the names of the passengers for the convenience of the flight service crew, as well as for record-keeping. The seats have both numbers and letters. In many planes, the letters begin with "A" on the left side of the cabin, with the highest letter on the right side of the cabin nearest the window. Incidentally, airline vernacular uses the

terms port and starboard to indicate left and right, respectively. Like many other expressions in airline terminology, they are terms that have been used on ships for hundreds of years. For convenience, the seats may be referred to as inboard or outboard; This designates their position relative to aisle and window. Inboard refers to the engines closest to the fuselage or the seats closest to the aisle; outboard refers to the engines farthest from the fuselage or the seats closest to the windows. The seat numbers on the medium-size and smaller jets usually begin with the number "one"—at the front of the plane for first class and at the rear for economy—with the highest numbers for both classes at the bulkhead that separates the two sections. In first class, some airlines mark each seat with the name of the passenger for whom it has been reserved. Incidentally, in airline vernacular the abbreviation for passengers is PAX, and first class and economy class are designated by FICL and EY respectively.

## New Words

<b>utilize</b> ['ju:tilaiz] <i>vt.</i>	利用
<b>appropriate</b> [ə'prəupriit] <i>adj.</i>	适当的, 恰当的
<b>airfoil</b> ['æfɔil] <i>n.</i>	机翼, 翼型
<b>flatten</b> ['flætn] <i>vt.</i>	把...弄平; 把...平展
<b>teardrop</b> ['tiədrɒp] <i>n.</i>	泪珠; (耳环上)下垂的宝石
<b>taper</b> ['teipə] <i>vi.</i>	逐渐变细
<b>rear</b> [riə] <i>n.</i>	后部; 背面
<b>mass</b> [mæs] <i>n.</i>	(物)质量
<b>thrust</b> [θrʌst] <i>n.</i>	推力
<b>drag</b> [dræg] <i>n.</i>	阻力

<b>vacuum</b> ['vækjuəm] <i>n.</i>	真空
<b>cushion</b> ['kuʃən] <i>n.</i>	垫子
<b>aloft</b> [ə'lɒft] <i>adv.</i>	高高地; 向上
<b>propel</b> [prə'pel] <i>vt.</i>	推进
<b>banking</b> ['bæŋkiŋ] <i>n.</i>	(飞机)倾斜; 倾斜飞行; 侧倾
<b>adjustment</b> [ə'dʒʌstmənt] <i>n.</i>	调节, 调整
<b>flap</b> [flæp] <i>n.</i>	襟翼, 阻力板
<b>hinge</b> [hɪndʒ] <i>vt.</i>	给...装上铰链
<b>atmospheric</b> [ˌætmə'sferik] <i>adj.</i>	大气的; 大气所引起的
<b>altitude</b> ['æltɪtju:d] <i>n.</i>	海拔高度
<b>manufacture</b> [ˌmænju'fæktʃə] <i>vt.</i>	制造
<b>aeronautical</b> [ˌɛərə'nɔ:tɪkəl] <i>adj.</i>	航空的
<b>identify</b> [aɪ'dentɪfaɪ] <i>vt.</i>	认出; 表明
<b>code</b> [kəʊd] <i>n.</i>	代号; 代码
<b>capacity</b> [kə'pæsɪti] <i>n.</i>	容量; 载量
<b>cruise</b> [kru:z] <i>vi.</i>	巡航
<b>maximum</b> ['mæksɪmə] <i>n.</i>	最大量; 最大限度
<b>auxiliary</b> [ɔ:g'zɪljəri] <i>adj.</i>	辅助的
<b>lounge</b> [laʊndʒ] <i>n.</i>	休息室
<b>jumbo</b> ['dʒʌmbəu] <i>n.</i>	体大而笨重的东西
<i>adj.</i>	巨大的
<b>connote</b> [kə'nəʊt] <i>vt.</i>	(词、词组等)意味着
<b>clumsiness</b> ['klʌmzɪnis] <i>n.</i>	笨拙, 不灵活
<b>clumsy</b> ['klʌmzi] <i>adj.</i>	笨拙的
<b>configuration</b> [kən'fɪɡju'reɪʃən] <i>n.</i>	构造, 结构; 座舱布局
<b>lavatory</b> ['lævətəri] <i>n.</i>	卫生间, 厕所
<b>modification</b> [ˌmɒdɪfɪ'keɪʃən] <i>n.</i>	更改; 改变, 改型
<b>interior</b> [ɪn'tɪəriə] <i>n.</i>	内部
<b>luxury</b> ['lʌkʃəri] <i>n.</i>	奢华; 舒适的环境

<b>fuselage</b> ['fju:zilɑ:ʒ] <i>n.</i>	机身
<b>partition</b> [pɑ:'tiʃən] <i>n.</i>	隔开物;隔板
<b>bulkhead</b> ['bʌlkhed] <i>n.</i>	(飞机的)隔框,舱壁
<b>cargo</b> ['kɑ:gəu] <i>n.</i>	货物
<b>convenience</b> [kən'vi:njəns] <i>n.</i>	便利,方便
<b>incidentally</b> [ɪnsi'dentli] <i>adv.</i>	偶然地;顺便说及地
<b>vernacular</b> [və'nækjulə] <i>n.</i>	行话
<b>respectively</b> [ris'pektivli] <i>adv.</i>	各自地;分别地
<b>terminology</b> [tə'mi'nɒlədʒi] <i>n.</i>	术语,专门名词
<b>designate</b> ['deizneɪt] <i>vt.</i>	指明;把…称做
<b>aisle</b> [aɪl] <i>n.</i>	通道,走廊
<b>abbreviation</b> [ə,bri:'vi:ʃən] <i>n.</i>	缩号;缩写词

### Phrases and Expressions

<b>act on</b>	对…起作用
<b>refer to</b>	系指;有关
<b>in order to</b>	为了…
<b>and so forth</b>	等等
<b>a number of</b>	许多,若干
<b>up to</b>	直到;达到
<b>consist of</b>	由…构成
<b>so that</b>	因此;以致

### Notes

1. In order to fly, the plane must create a force stronger than the force of its own weight. ——飞机要飞行,必须产生大于自身重量的力。



句中的“stronger than the force of its own weight”是形容词短语后置做定语,它所起的作用与定语从句大致相同。如:a classroom much larger than yours(比你们的大得多的教室), the actor suitable for the part(适合担任这一角色的演员)。

在第五段“there are standard features common to all”这个句子中,“common to all”也是形容词短语后置做定语。

2. This is called the jet stream. ——这被称做急流。

急流是指对流层附近的、一般是从西方吹来的高速风的狭长弯曲的空气流,风速常常超过 250 英里。

3. Many planes are identified by manufacturing company and model number in a kind of code that identifies the size, type of plane, passenger capacity, and other information. ——对许多飞机而言,人们可根据其生产厂家和机型代码认出它们。这些代码向人们表明飞机的大小、机型、载客量和其他信息。

4. It is often referred to by passengers as a “jumbo” jet, but this term is disliked by most airlines since it connotes clumsiness, and the 747 is anything but clumsy. ——乘客们常把波音 747 称做“jumbo”,多数航空公司不喜欢这个词,因为它含有“笨重”之义。其实波音 747 根本就不笨重。

1) 句中的“jumbo”指体大而笨重的东西。

2) 短语“anything but”的意思是根本不。例如:

Many large cities are anything but beautiful. 许多大城市根本就不漂亮。

5. The 747 is so large that just the fuel it carries weighs as much as a fully loaded 727. ——波音 747 飞机很大,单是它所携带的燃油的重量,就与满载的 727 飞机重量差不多。
6. the McDonnell Douglas DC-8 and DC-10——美国麦·道公司研制的 DC-8 和 DC-10。

DC-8 为远程客机。DC-10-10 为基本型,适用于 480~