

# Intermediate English for Aircraft Engineering

# 民航工程英语



王爱国 吕宗平 林军 主编

中国民航出版社

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# 致读者

该教材包括听、说、读、写等方面的练习，旨在帮助您提高英语技能，增强您在民航工程方面的英语语言能力，在听力、口语和阅读部分特别注重航空工程词汇等方面的内容，帮助您提高科技英语（EST）和特殊用途英语（ESP）的阅读理解能力。航空英语方面的词汇知识和语言技能帮助您提升飞机制造和维修方面英语交流、阅读、翻译和写作等语言能力。

编写该教材的目的：

1. 增强您在英语交流方面的自信心。全面提高您在航空英语方面听、说、读、写、译的知识和技能。
2. 该教材适用于您与同学、老师进行语言交流的语境，您可以在学习航空英语技能的同时扩大自己在该领域的英语词汇量。
3. 通过班级讨论、PPT 展示和辩论，您可以增强自己运用英语的能力。在继续扩展航空英语词汇量的同时，您还可以拓展自己的课堂表达技巧。
4. 通过学习该教材，您可以开发自己在航空领域的知识范围，熟练掌握有关航空制造业和飞机维修、维护等不同话题，并且使用英语自如表达自己的观点。

每个章节都有明确的主题，你可以围绕该主题学习相关的航空知识和语言技能。里面会有很多的巧妙安排，以便读者能够在学习结束后达到一定的目标。每个章节都有大量的练习题，包括听、说、读、写等内容，这些练习旨在培养您在特定领域的英语运用能力。

每个章节的最后部分是生词和短语。它们可以帮助您重温并记忆所学过的知识和词语。这些词语和短语需要您认真领悟学习，同时它们也是前面课文和练习当中的语言点和难点。词语部分既有普通英语词汇，也有专业科技词汇。

该教材的多数材料来自维基百科书。在学习时，您可以通过网络和字典查阅生词，找到相应的图片或者译文，了解这些术语的定义和概念。在课堂实践活动中，您可以在小组内和同学协作，共同解决难题，并分享知识。这样既可以提高您的语

言学习效率，还可以减轻您的工作负荷，从而巧妙地充实自己的航空英语能力。

教材编写分工为：王爱国统筹组织资料，吕宗平编写第一章和第二章，王爱国编写第三章和第四章，林军负责全部教材的校对和资料整理。首先我们要感谢 Scott Stroud 先生，他为我们查找资料来源、学习并理解术语提供了大力支持和帮助。此外还要感谢张宗路、李燕飞、赵汝斌、刘珍、郑小行、牛夏蕾等硕士研究生，他们也为本书的出版做了一定的工作。

编 者

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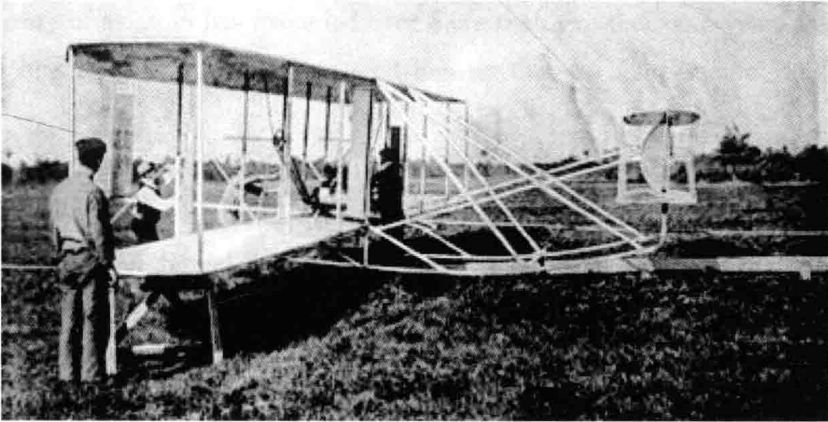
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# Aviation History







# Section 1

## The History of Aviation

The history of aviation has extended over more than two thousand years from the earliest attempts in kites and gliders to powered heavier-than-air, supersonic, and hypersonic flight.

The first form of man-made flying objects were kites. The earliest known record of kite flying is from around 200 BC in China, when a general flew a kite over enemy territory to calculate the length of tunnel required to enter the region. Yuan Huangtou, a Chinese prince, survived by tying himself to the kite.

Leonardo da Vinci's 15th-century dream of flight found expression in several designs, but he did not attempt to demonstrate his ideas by actually constructing them.

With the efforts to analyze the atmosphere from the 17th to 19th centuries, gases such as hydrogen were discovered which in turn led to the invention of hydrogen balloons. Various theories in mechanics by physicists during the same period of time, notably fluid dynamics and Newton's laws of motion, led to the foundation of modern aerodynamics. Tethered balloons filled with hot air were used in the first half of the 19th century and saw considerable action in several mid-century wars, most notably the American Civil War, where balloons provided observation during the Battle of Petersburg.

The term aviation, noun of action from stem of Latin avis "bird" was coined in 1863 by French aviation pioneer Guillaume Joseph Gabriel de La Landelle (1812—1886) in "Aviation ou Navigation aérienne".

Experiments with gliders provided the groundwork for heavier-than-air craft, and by the early 20th-century advances in engine technology and aerodynamics made controlled, powered flight possible for the first time.

## Reading Comprehension

1. How long is the history of aviation?
2. What is the earliest record of kite flying?
3. What led to the invention of hydrogen balloons?
4. What led to the foundation of modern aeronautics?
5. What is the origin of the term aviation?
6. When and why did heavier-than-air craft come into being?

## Vocabulary

attempt	n. 打算; 企图
kite	n. 风筝
glider	n. 滑翔机; 滑翔伞
supersonic	adj. 超音速的
hypersonic	adj. 高超音速的
territory	n. 领地; 疆域
calculate	v. 计算
tunnel	n. 隧道
survive	v. 生存; 存活
tie	v. 系; 绑
demonstrate	v. 展示
construct	v. 建造
atmosphere	n. 大气; 环境
hydrogen	n. 氢气
balloon	n. 气球
mechanics	n. 力学; 机械学
fluid dynamics	n. 流体动力学
aerodynamics	n. 空气动力学
tether	v. 练栓; 系绳
considerable	adj. 大量的; 相当的
observation	n. 观察
coin	v. 造词; n. 硬币
navigation	n. 导航
aérienne	adj. 空气的; 航空的

heavier-than-aircraft      n. 比空气重的飞行器

## Supplementary Vocabulary

chronological	adj. 编年史的
concorde	n. 协和号
unmanned	adj. 无人的
transatlantic	adj. 跨越大西洋的
solo	adj. 单人飞行的
crossing	n. 穿越; 跨越
cross-Channel	adj. 跨越海峡的

## Discussion

What do you consider to be the major events in the history of aviation? Note down your conclusions and report to the class.

## Action

Put the following events into what you think is the correct chronological order.

1. Amelie Earhart, the first woman to cross the Atlantic
2. The Chinese invent kites
3. First powered, manned, heavier-than-air controlled flight.
4. First unmanned balloon flight
5. First faster-than-sound flight by Chuck Yeager
6. Charles Lindberg, first transatlantic solo crossing
7. First designs of flying machines by Leonardo Da Vinci
8. First cross-Channel flight by Louis Blériot
9. Airbus A380, first flight
10. A Chinese flew a kite over enemy territory

## Supplementary Reading

### Important Dates in the History of Aviation

#### Vocabulary

carry out	v. phr. 实施
propel	v. 推动
moist	adj. 潮湿的
steam-powered	adj. 蒸汽驱动的
monoplane	n. 单翼飞机
helicopter	n. 直升机
hover	v. 盘旋；徘徊
theMediterranean Sea	n. 地中海
aviator	n. 航空者
commercial	adj. 商业的
voyager	n. 旅行者
refuel	v. 加油
take off	v. phr. 起飞

#### Read the following historical events and check your answer.

1000 BC-The Chinese invented kites

200 BC-A Chinese flew a kite over enemy territory

1400-Leonardo de Vinci made the first designs of flying machines

1783-The Mongolfier brothers carried out the first unmanned balloon flight. The balloon was propelled by burning a pile of moist wool and old shoes

1799-Sir George Cayley invented the concept of the flying wing

1890-Clément Ader flew a steam-powered, bat-winged monoplane, which he named Eole a distance of 50m near Paris

1903-The Wright Brothers carried out the first powered, manned, heavier-than-air controlled flight.

1907-First helicopter flown by Paul Cornu, a French inventor. The flight lasted only 20 seconds and hovered just 1 foot (30cm) above the ground

1909-First International aviation competition in Reims, France

1909-First cross Channel flight by Louis Blériot

1913-First crossing of the Mediterranean Sea by Roland Garros

1914-Two-way radio accomplished between pilot and ground control

1919-British aviators Alcock and Brown made the first non-stop transatlantic flight in June

1927-First solo transatlantic crossing by Charles Lindberg

1928-Amelie Earhart becomes the first woman to cross the Atlantic

1930-Costes and Bellonte become the first pilots to link Paris and New York by east to west

1947-First faster-than-sound flight by Charles Yeager

1952-The de Havilland Comet, the first commercial jet airliner, began service from London to Johannesburg

1969-First flight of Concorde

1971-Concorde makes its first transatlantic crossing

1986-Voyager, first non-stop flight around the world without refuelling

2005-The Airbus A380 successfully took off from Blagnac Airport, Toulouse

## Section 2

### Louis Blériot

——the First Man to Fly the English Channel



Louis Blériot

Louis Blériot was born in Cambrai, France on July 1, 1872, and studied engineering in Paris. He was an inventor, an aircraft designer, and a pilot. He is best known for his flight over the English Channel on July 25, 1909, the world's first flight over a large body of water in a heavier-than-air craft.

He had an early interest in aviation and in 1900, built a motor-powered machine called an ornithopter, which was intended to fly by flapping its wings. Like other ornithopters before, this experiment failed, but he continued working toward a practical airplane.

During 1903, Blériot teamed up with Gabriel Voisin, another aircraft designer, to form the Blériot-Voison Company. The company built a floatplane glider, which flew during 1905. They also developed a biplane powered by an Antoinette motor. The company broke up in 1906, and Blériot began to build and fly aircraft of his own design.

As lightweight engines became available, he developed planes with various configurations ranging from box-kite biplanes to a canard (tail-first) monoplane. The Blériot V was the world's first successful monoplane. This plane got off the ground in 1907 but soon crashed and was abandoned.

A £1000 prize being offered by the London Daily Mail for the first successful flight

across the English Channel interested Blériot and encouraged him to develop his fourth monoplane and first truly successful aircraft, the Blériot XI. After setting a European endurance record of 36 minutes 55 seconds and winning a cross-country prize, Blériot felt confident about embarking on his cross-Channel trip. He made the trip in 37 minutes, delighting the French and worrying the British, who felt that they had suddenly become vulnerable to air attack.

Shortly after, Blériot turned his attention to aeronautical design and engineering. He became president of the floundering aircraft company Société pour les Appareils Deperdussin in 1914. He renamed the company Société Pour Aviation et ses Derives (SPAD) and turned it into one of France's leading manufacturers of combat aircraft. During World War I, SPAD built more than 5,600 aircraft for France and exported some to Great Britain and other countries.

After the war, Blériot formed his own company, Blériot-Aéronautique for the development of commercial aircraft. He died on August 2, 1936.

**Reading Comprehension**

- 1. When and where was Louis Blériot born? What was he best known for?
- 2. What is an ornithopter?
- 3. What was the achievement of Blériot-Voison Company?
- 4. What made Blériot develop his fourth monoplane, the Blériot XI?
- 5. How were the French and the British influenced by Blériot's nearly 37-minute flying experience?
- 6. What did SPAD stand for? What was its contribution to World War I?
- 7. When did Louis Blériot die?

**Vocabulary**

the English Channel	n. phr. 英吉利海峡
ornithopter	n. 扑翼飞机
flap	n. 襟翼
team up	phr. 与……组队
floatplane	n. 水上飞机
glider	n. 滑翔机
biplane	n. 双翼飞机
motor	n. 马达; 发动机



break up	v. phr. 破产 (go bankrupt)
engine	n. 引擎; 发动机
configuration	n. 构造; 外形
box-kite biplane	n. 箱形风筝双翼机
canard	n. 鸭式飞机
crash	n. & v. 坠毁; 撞击
abandon	v. 放弃
Daily Mail	n. phr. 每日邮报
endurance	n. 耐久力; 忍耐力
confident	adj. 自信的
embark (on)	v. phr. 开始
vulnerable	adj. 容易受攻击的; 脆弱的
flounder	v. 挣扎; 折腾
manufacturer	n. 制造商;
combat aircraft	n. 战斗机
commercial aircraft	n. 商务飞机

## Task

Read through the article on Louis Blériot. Once you have understood the vocabulary and made sure of the pronunciation, make notes on the main points then give a summary to the group.