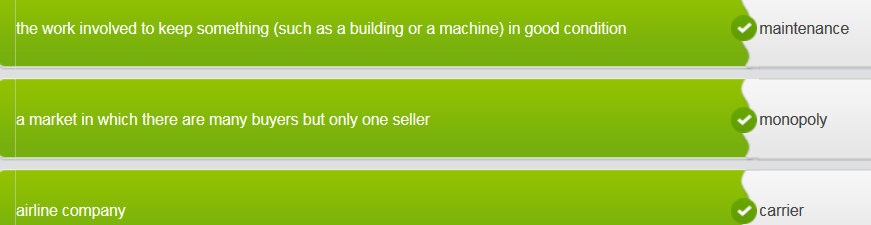
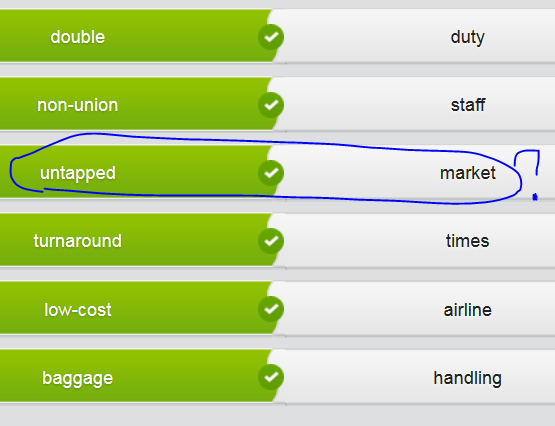
# Unit Aviation

# STOP

## Budget airlines

You are about to read an article about budget airlines. Before you do so, work out the meaning of some of the key vocabulary. Match the words and phrases to their definitions.





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| [ untapped market; untapped customers; untapped capabilities ] an untapped supply, market, or talent is available but has not yet been used  〔资源、市场或天赋〕未开发的，未利用的; 没有挖掘的; An untapped supply or source of something has not yet been used. (供给、资源)未利用的  •  Mongolia, although poor, has considerable untapped resources of oil and minerals.   蒙古虽然贫穷，却有相当储量未利用的石油和矿物资源。  •Older people are an untapped resource in the employment market. 年龄较大的人是就业市场中有待利用的资源。  •We believe there is untapped potential. 我们相信还有潜力没有挖掘出来 |
| [nəu'frilz] no-frills  adj. 〔产品或服务〕只包括/提供最基本功能的，只满足最基本需要的（其他好的服务都不提供）  adj. [only before noun 仅用于名词前]  [词条图片](javascript:;)    a no-frills product or service includes only basic features and is not of the highest possible quality  e.g. **no-frills accommodation** in hostels 青年旅社只提供 必需品的住宿  e.g**. no-frills services** in budget airline, e.g. AirAsia |
| frill /frɪl/      |TEM8  1.  [N-COUNT](javascript:;)A frill is a long narrow strip of cloth or paper with many folds in it, which is attached to something as a decoration. 褶边  •  ...curtains with frills.   …带褶边的窗帘。  2.  [N-COUNT](javascript:;)If you describe something as having no frills, you mean that it has no extra features, but is acceptable or good if you want something simple. 装饰  1.  a decoration that consists of narrow piece of cloth that has many small folds in it  饰边，褶边  RELTD [FLOUNCE](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=flounce)  •She was wearing a white blouse with frills at the cuffs. 她穿了一件袖口有褶边的白衬衫。  2.  frills  [plural,复数] attractive but unnecessary features  虚饰，不实用的陪衬  •We supply basic, no-frills tractors at low prices. 我们低价供应没有花哨功能的基本型拖拉机。  without/with no frills  •It was just a comfortable flat with no frills. 这只是一套舒适的公寓，没有华而不实的装饰。 |
| [**cost advantages成本优势**]  e.g. The **strategy** includes hiring **non-union staff**, using one aircraft model to cut **maintenance costs**, flying short routes to **reduce turnaround** times**,** landing only at secondary airports, selling tickets online to avoid middlemen and eliminating **frills** like hot food. All this makes it near impossible for airline discounters to gain **cost advantages成本优势.** |

**'No Frills' Takes Flight in budget airline**

By Sonia Kolesnikov-Jessop   
  
When AirAsia started flying out of Kuala Lumpur eight years ago, it quickly became the cheapest of the cheap, the lowest-cost airline in the world. AirAsia says it spends only 2.5 cents to fly one passenger one kilometer, compared to 4.5 cents for Ryanair and 7.5 cents for Southwest – the discount leaders of Europe and America. AirAsia achieves these savings by asking pilots to train staff in everything from first aid to baggage handling (on the premise that pilots are smart and versatile). Cabin attendants do double duty, cleaning planes and selling drinks on commission. It's a "big fallacy" to think no-frills means just cutting out free drinks, says CEO Tony Fernandes, who has been known to work the check-in counter. You've got to "change the airline culture."   
  
Even that may not be enough for no-frills entrepreneurs. The discount revolution has been slow to arrive in Asia, where governments still control most major airlines and have offered a grudging welcome to new competitors. Last year discount carriers accounted for less than 1 percent of passenger traffic in Asia (excluding Australia and Japan), compared with about 25 percent in the United States and 10 percent in Europe. While Southwest recently became the largest airline in the United States, AirAsia is a success, with profits of $161 million last year. Now, in a frontal assault on AirAsia and other private upstarts like Cebu Pacific in the Philippines and Bangkok Airways, state-owned carriers like Singapore Airlines, Thai Airways and Qantas are considering their own no-frills spinoffs. "Most of the airlines in Asia are big monopolies; they have always had it their way and they don't like any whiff of competition," says Fernandes. "The unknown is causing this mass hysteria."   
  
It will be hard to make the no-frills formula work Asia-wide. In Europe and the United States, the strategy includes hiring nonunion staff, using one (often narrow-body) aircraft model to cut maintenance costs, flying short routes (less than two hours) to reduce turnaround times, landing only at secondary airports, selling tickets online to avoid middlemen and eliminating frills like hot food. In Asia, labor is already inexpensive, most regional hops are longer than two hours, secondary airports are not cheap and consumers are less likely to buy online. Asian majors already cram cheap seats into the back of wide-body jets, creating a budget "plane within the plane." All this makes it near impossible for discounters to gain cost advantages on routes in Asia, says Richard Stirland, director general of the Association of Asia Pacific Airlines.



So why are the majors testing the down market? In the West, no-frills airlines are luring millions of customers who have never flown before, and Asia has an even larger untapped market – one that no airline executive dares ignore. And while one former deputy chairman of Singapore Airlines recently warned that aviation history is "littered" with no-frills failures, another is leading a new start-up, ValuAir. None of this scares AirAsia, which has already started regional flights. Fernandes insists, "We can always beat the big guys on cost." He won't say how, but he has been proving it.

## Practice

Complete the sentences with the words and phrases below.

cost  -  eliminating  -  no-frills  -  profits  -  strategy  - advantages  - maintenance  -  double duty  -  untapped

1. Cabin attendants do , cleaning planes and selling drinks on commission.   
  
2. Even that may not be enough for entrepreneurs.   
  
3. AirAsia is a success, with of $161 million last year.   
  
4. The includes hiring non-union staff, using one aircraft model to cut costs, flying short routes to reduce turnaround times, landing only at secondary airports, selling tickets online to avoid middlemen and frills like hot food.   
  
5. All this makes it near impossible for discounters to gain .   
  
6. Asia has an even larger market - one that no airline executive dares ignore.

Answers:

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| 1. Cabin attendants do **double duty** , cleaning planes and selling drinks on commission.   2. Even that may not be enough for **no-frills** entrepreneurs.   3. AirAsia is a success, with **profits** of $161 million last year.   4. The **strategy** includes hiring **non-union staff**, using one aircraft model to cut **maintenance costs**, flying short routes to **reduce turnaround** times**,** landing only at secondary airports, selling tickets online to avoid middlemen and eliminating **frills** like hot food. All this makes it near impossible for airline discounters to gain **cost advantages成本优势.**   6. Asia has an even larger **untapped market** - one that no airline executive dares ignore. |

# Ref:

\* Air crash investigation …(ACI)

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# CNN: Captain, Sally ['sælɪ] successfully ditched US Airways Flight 1549 on the Hudson river, midtown Manhattan

* <https://www.theguardian.com/film/2015/jun/03/clint-eastwood-direct-miracle-on-the-hudson-film-pilot-chesley-sullenberger>
* <https://www.theguardian.com/world/2009/jan/16/us-airways-plane-crash-lands-on-hudson>
* <http://usatoday30.usatoday.com/news/nation/2009-01-15-plane-crash-hudson_N.htm>

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| **[ Excerpt  ['eksɜːpt]]**  U.S. 1549 airplane was struck by a flock of Canadian geese by accident. Then the hydraulic failure caused the engine going into a stall. => Caption, who is the pilot-in-command责任机长, decided to ditch on the Hudson river  ['hʌdsən] , midtown Manhattan 哈得孙河.  [Background about Canada geese]  The **Canada geese,** which are sometimes incorrectly referred to as the Canadian goose, has a wingspan of 50 to 67 inches (127 to 170 centimeters) and can weigh from more than 6 pounds to nearly 20 pounds (3 kg to 9 kg).  The birds that brought down **US Airways Flight 1549** (Captain, Sally(英)萨利) in the Hudson River Jan. 15 were migratory **Canada geese**, scientists announced today. "Resident birds near airports may be managed by population reduction, habitat modification, harassment or removal, but migratory populations require more elaborate techniques in order to monitor bird movements," said Peter Marra, research scientist at the Smithsonian's Migratory Bird Center located at the National Zoo and lead author of the project's paper.  Most of the 11 subspecies of [Canada geese](https://www.livescience.com/3243-growing-bird-populations-show-conservation-successes.html) migrate to the Arctic and sub-Arctic regions to nest. The total number of resident Canada geese in the United States is about 3.2 million and has increased dramatically during the past several decades, according to the U.S. Fish and Wildlife Service.  [ Story]  The US Airways 1549 plane took off from New York's LaGuardia Airport, [colliding with **a flock of** geese](https://www.livescience.com/3239-birds-jet-airplane.html) approximately 2,900 feet above the ground, extensively damaging both engines five miles from the airport. Pilot Chesley (Sally) Sullenberger III **ditched on the Hudson River** and all 155 people on board survived with **non-life threatening** injuries.  The pilot of a US Airways jet managed to avoid disaster and save the lives of all 155 people on board his stricken plane when he **ditched into the icy waters of the Hudson river** moments after taking off from New York's LaGuardia airport.  The extraordinary escape was immediately dubbed the miracle on the Hudson, and **hailed as**把…称赞为，把…誉为 a testimony to the ability of [New York](https://www.theguardian.com/us-news/new-york) to cope with disaster in the wake of 9/11. Flight 1549 was carrying 148 ­passengers, including a baby, five crew and two pilots, and all of them escaped. The captain, named last night as ­Chesley Sullenberger, short as Sally, has 29 years' experience with **commercial airlines** and is a former US airforce fighter pilot.  With both his twin engines/turbines **going into a stall(引擎熄火)**, one apparently on fire, and with the ­nearest airport out of range, he calmly brought the plane to successfully **ditch on the river** on the west side of Manhattan.  Captain Sally then helped passengers escape to rescue boats, and twice walked the length of the passenger cabin inside the sinking jet to check that everyone had got out safely, before ­escaping himself. "We have had a Miracle on 34th Street. Now we have a miracle on the Hudson," the governor of New York said.  The Airbus 320 took off from LaGuardia **bound/heading for** Charlotte in North Carolina at 3.26pm. A mere 30 to 45 seconds after take-off there was a bang and the aircraft shook, believed to have been caused by it striking **a flock of geese - the birdstrike, which is seens as one type of natural disaster for air emergencies**.  The pilot reported to air traffic control that he was experiencing engine ­problems and requested to return to ground. The nearest identified airport was in New ­Jersey, but when it became clear **he could not make it**, the pilot prepared for a crash landing on the Hudson. "**Brace yourself f**or impact," he told the passengers.  Seconds later the plane struck the ­Hudson, on a line with 48th Street in midtown Manhattan, turning **a stretch of waterway** normally populated by tourists enjoying a waterside view of the skyscrapers into an astonishing fight for survival.  Eyewitnesses reported seeing **a splash 飞溅** and the plane coming to an immediate stop, then afloat on the river for few mins and started to sinking gradually; it looked so controlled that some witnesses mistook it for the landing of a seaplane. "I just thought, 'Why is it so low?' And **splash**, it hit the water," said one witness. Jeff, one of the passengers, said that after ­take-off they had heard a bang and the plane filled with smoke from the left engine. "**It was pretty scary,** man. **We got out by the luck of God.** **I take my hat off to** the pilot – it was incredible we all made it off alive."  The survival of all on board appears to have been thanks to a combination of the plane remaining intact on impact and almost immediate assistance from at least seven water taxis and **tugs/tug boats** which **swarmed around** the jet. **Overwing emergency exit doors** (位于机翼边上的紧急出口) were opened quickly, and ­the **emergency slides/exit slides** were also opened shortly for **“jump and slide”.** Passengers either stepped straight into the life boats or stood in line on rafts木筏, or on top of the wings which acted as **­buoyancy['bɒɪənsɪ浮力** and **kept the plane afloat.**  By the time all had been taken on to the rescue boats, the plane had water up to its windows and was floating rapidly ­southwards in the outgoing tide. Several passengers were taken to hospitals, but their injuries were reported to be no more serious than mild **hypothermia体温过低**, **shock休克(lost consciousness for a while),** cuts and bruises.  "Normally this isn't the way people arrive in New York," said the city's mayor Michael Bloomberg. "But as long as ­everyone got off safely that's secondary."  A team of 20 investigators from the National Transportation and Safety Board has been **dispatched** to **root out** the causes of the plane failure. Witnesses suggested that the engine trouble was caused by the plane flying into **a flock of gees**e – a perennial threat at New York airports as a result of the city lying on a well-used migratory path for birds.  One puzzle, though, is why both engines cut out. The left engine appeared to have caught fire, but pilots are usually able to bring a plane into an emergency landing with just one engine working. An air incident investigator told the BBC that the incident was "quite remarkable, but not unique". He said if both engines of the plane had failed, the aircraft would become like a "**glider**滑翔机". |
| Landing hailed as 'Miracle on the Hudson,' probe begins  By Martha T. Moore, Kevin McCoy, Alan Levin and Rick Hampson, USA TODAY  NEW YORK — In what New York's governor called "a miracle on the Hudson," a veteran pilot glided a US Airways jetliner with two dead engines onto the river's frigid surface so smoothly Thursday that all of the 150 passengers and five crewmembers escaped serious injury. Some didn't even get their feet wet.  One day after pilot Chesley Burnett "Sully" Sullenberger, 58, heroically guided the disabled U.S. Airways jetliner to safety in the portion of the Hudson River off Midtown Manhattan, investigators on Friday brought in a giant crane and a barge to help pull the plane from the waterway.  Federal investigators said one of the engines on the jetliner is missing. Police divers are using sonar to help find the engine, while crews are trying to pull the aircraft from the river.  In a photograph of the plane as it approached the river, it appears to have both of its engines.  Officials also are focusing on recovering the black box from the plane and interviewing the crew about the accident — apparently caused by birds that slammed into the plane. The Airbus A320, built in 1999, is tethered to a pier on the tip of Lower Manhattan.  Mayor Michael Bloomberg Friday morning honored first responders to the crash.  "Yesterday I think the whole world saw just how good they are," Bloomberg said. "This is a story of heroes, somethng straight out of a movie script...it was too good to be true."  James Ray, a spokesman for the U.S. Airline Pilots Association, said he spoke with Sullenberger on Friday and described him as being "in good shape physically, mentally and in good spirits."  "He was just very calm and cool, very relaxed, just very professional," Ray said.  He said the flight crew was resting and likely would meet with investigators later Friday or Saturday and that the crew has been asked not talk to the press about the accident until after the investigation is complete.  Meanwhile, survivors Friday recounted tales of horror and hailed the pilot as a hero who delivered them from certain death.  While on a rescue raft with the pilot in the frigid cold, passenger Billy Campbell said he went to Sullenberger.  "I leaned over and grabbed his arm, and I said I just want to thank you on behalf of all of is," Campbell told NBC's "Today" show. "He just said, 'You're welcome.'"  The scene in Lower Manhattan Friday was a lot more sedate than the drama from Thursday afternoon, when all were rescued from the slowly sinking jet by a flotilla of ferries and emergency craft that arrived almost immediately after the crash, apparently caused when the Charlotte-bound aircraft collided with birds shortly after taking off from LaGuardia Airport.  Within moments, both of the jet's engines apparently malfunctioned, forcing pilot Sullenberger to make a rare and dangerous landing on the Hudson on a day when wind-chill readings hovered around 11 degrees.  Jeff Kolodjay was in seat 22A, en route to South Carolina for a golf weekend with his father and cousins. He heard an explosion and saw fire in an engine under a wing as the craft circled over the Hudson River. At first, he says, "I thought by chance we'd make it back to LaGuardia and land."  PHOTO GALLERY: [US Airways flight goes down in Hudson](http://www.usatoday.com/news/gallery/n090115_hudsonplane/flash.htm?gid=857)  But then, "the captain said, 'Brace for impact.' Everyone started saying prayers, just kinda looking at each other, not knowing what to say or what to do," he recalls. "How would you feel? 'Brace for impact' is not what you want to hear."  Attorney Ben Von Klemperer was getting up from his desk on the 25th floor of a Manhattan office building when he saw the Airbus 320 flying slow and low over the river — almost parallel to the water.  The craft didn't jerk, sway or dive, and there was only a small splash when it hit the water. "Textbook way to land a plane on water," he says. "It looked like he was landing on the tarmac in the airport, except the tarmac was the Hudson River."  Mayor Michael Bloomberg called the landing "masterful." Gov. David Paterson called the pilot "heroic" and the fact no one was killed "a miracle on the Hudson."  Capt. Sullenberger, of Danville, Calif., is not only a former fighter pilot with thousands of hours of experience in airline jets. He has another credential that proved relevant: He's a licensed glider pilot, according to the Federal Aviation Administration.  Sullenberger has worked as a safety representative for the Air Line Pilots Association, which formerly represented US Airways' pilots, says spokeswoman Linda Shotwell. John Cox, a former union safety chief who flew for US Airways, says Sullenberger "is one sharp guy. Very, very, very savvy. Everything you could want in a professional pilot."  The jet went down minutes after its 3:26 p.m. takeoff from LaGuardia, according to the FAA. The plane was submerged up to the windows when rescuers arrived and pulled passengers in yellow life vests from the doors and wings of the aircraft, whose fuselage was intact.  Over the next few hours, the plane slowly sank in the near-freezing water before being towed to a nearby dock for examination by investigators from the National Transportation Safety Board.  'Why is it so low?'  Less than a minute into the flight, the pilot told an air-traffic control the jet had suffered a "double bird strike," says Doug Church, spokesman for the National Air Traffic Controllers Association.  The controller sent the aircraft back toward LaGuardia, but the jet's pilots saw an airfield below — Teterboro Airport in New Jersey — and asked to land there, Church says. They got the OK but realized they could not reach Teterboro and told the controller that they would have to ditch in the Hudson.  Patrick Wilder, 35, was riding his bike on 125th Street in Manhattan when he saw the jet flying very low over the George Washington Bridge.  "My first thought was, 'Is this a terrorist attack?' " he says. "I knew from experience that was not a path they normally take. I stopped and watched it for a few minutes. … It looked like it was landing, kind of looking like it was pulling up."  Barbara Sambriski, a researcher at the Associated Press, saw the jet go down from the news organization's high-rise office on Manhattan's West Side. "I just thought, 'Why is it so low?' And, splash, it hit the water," she says.  Passenger Kolodjay concluded that "the landing wasn't as bad as I thought it would be."  Passenger Billy Campbell told MSNBC, "I thanked the pilot and told him he saved my life. He was a very humble man. He shook my hand and said, 'Thank you.' "  Campbell said co-pilot Jeff Skiles told him the jet was moving at 125 mph when it hit the river. "I said, 'What did you think?' " Campbell recalled. "He said, 'I have to be honest with you, I thought it was going to be much worse.' "  Bill White, president of the Intrepid Sea, Air & Space Museum that features a restored World War II aircraft carrier, says he ran out onto the ship's flight deck and saw dozens of people on the plastic slides coming out from the plane's exits.  "Those pilots did a miraculous job," he says. "If they had come 20 yards farther over it would have been the end."  Suddenly, commuter ferries passing through the area joined helicopters and other boats as rescue vehicles. "Is this happening?" ferry deckhand Honorio Hector Rabanez asked himself when his ferry's captain, Vince Lombardi, said, "Man overboard, there's a real emergency."  It was much worse than that. They arrived at the jet to find dozens of passengers in rafts waiting to be rescued. Others were still on the sinking jet. They included children and an elderly passenger desperate to get off.  "People were panicking," Rabanez says. "They were saying, 'Hurry up,' because the water was cold" — about 36 degrees, according to the NY Waterway ferry.  "There were a lot of scared people," Lombardi says. "They were cheering when we pulled up."  Paterson says one passenger, whom he did not identify, told him he had lost a brother in the Sept. 11, 2001, terrorist attacks.  A World Yacht cruise boat, which gives tours of the rivers around New York, had about 20 passengers wrapped in blankets being interviewed by investigators. Across the river, passengers were taken to the Arthur's Landing restaurant and found a welcome carpet made of white linen tablecloths, leading to the front door.  Some passengers were taken to local hospitals, none with life-threatening injuries. Ten were admitted to St. Luke's-Roosevelt, eight in good condition, two stable. Bloomberg said among those on board was an infant who appeared to be fine.  "They're shaken up," says Gabe Wilson, associate medical director of the emergency department. "At the same time, they understand that they are very lucky." Most suffered from mild hypothermia, "which is amazing, based on the weather today."  Emergency Medical Service staffer Helen Rodriguez says she transported a 23-year-old passenger who had stripped to his underwear and was about to try to swim to shore before "somebody got him out."  Church says air-traffic controllers believe the flock of birds that hit the jet was so large it showed up on their radars.  Chris Sibila, 25, a pilot for Air Wisconsin, says pilots see birds frequently, but "they usually avoid you at all costs." But, he says, large birds can get caught in the engines. "If it hits one engine, then you are fine," he says, "but not two."  Joe Mazzone, a retired Delta Air Lines pilot, says it's not unusual for birds to strike jets. He says that when jets get ready to take off, the tower will alert the crew if birds are nearby. Birds "literally just choke out the engine and it quits," he says.  Praise for the pilot  Pilot Sullenberger described himself in an online professional profile as a 29-year employee of US Airways. He started a consulting business, Safety Reliability Methods Inc., two years ago.  Bloomberg says the pilot told him that after landing the plane, he walked the length of the cabin twice to make sure everyone had gotten out safely. He was the last to leave the aircraft, Bloomberg says.  How difficult a feat did Sullenberger pull off in landing the jet on the Hudson?  Landing a large jet on water is highly unusual, but it's something pilots train for, says Capt. Rory Kay, safety chief for the Air Line Pilots Association, who flew a simulated flight into a water landing during a training exercise at his airline two years ago.  Pilots must ensure that the landing gears are up so that the bottom of the jet is smooth. Otherwise, the water landing will tear the jet apart, Kay says.  In addition, the pilots need to activate panels on the wings known as slats and flaps that expand the size of the wing and allow a jet to fly slower during takeoffs and landings. That way, the jet touches down as slowly as possible to minimize the chance of damage.  Even with wheels and nose up, large jets are not seaplanes. On the Airbus A320, for example, the engines hang down off the wings, and would act like parachutes to jerk the plane to a violent halt as soon as they hit the water.  The crew had several factors in their favor Thursday, Kay says. It was daylight, skies were clear and winds were light. The jet's attendants also apparently did an excellent job, Kay says. While the pilots must alert passengers to brace themselves for the landing, flight attendants are responsible for opening emergency doors, inflating life rafts and instructing passengers on using life vests.  The past two years have been the safest U.S. commercial aviation history, but the past month has been tumultuous.  On Dec. 20, a Continental Airlines Boeing 737-800 skidded off 车打滑 a runway in Denver as it was trying to take off, breaking apart and bursting into flames. All 115 people aboard escaped. The NTSB reported that five people suffered serious injuries.  For the first time since the dawn of the jet age, two consecutive years passed — 2007 and 2008 — without a single passenger death on a scheduled airline flight carrying 10 or more seats, according to USA TODAY research of government and industry data. During those two years, airlines carried about 1.5 billion passengers.  Sibila says the US Airways plane apparently landed in the safest possible place. In Manhattan, crowded by office towers, apartment buildings and residential neighborhoods, the river was the safest place to land.  "It's clear," he says. "It's the best place if you can't make it to a runway. They showed you can make a safe landing in the river if you do it all correctly."  Passenger Carl Dazarian, 62, was stunned at how smoothly Sullenberger eased the plane into the Hudson, explaining how even the slightest change of angle could have resulted in their deaths.  "It was one of my better landings," he says.  Also among Sullenberger's admirers was Von Klemperer, the lawyer who watched it all from his 25th-floor office.  "If I'm ever on a plane with that pilot," he says, "I'll feel good." |

# Lexical resource

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| grease | * 1. a fatty or oily substance that comes off meat when it is cooked, or off food made using butter or oil 〔肉或食物中的〕油脂 e.g. Scour the grease from all bowls.   2. lubrication = grease oil润滑油   3. Slang: grease = bribery, such as money or influence, that can facilitate the attainment of an object or a desire: 贿赂：能使目标或欲望的实现变得容易的东西，如钱或影响力： eg The referee accepted some grease/bribery to falsify/manipulate做假 the outcome of the race. 接受贿赂来操纵比赛结果   4. grease pen: 油笔; playpen: 婴儿围栏 |
| 贫乏的资源 | ['mi:ɡə] meager/scarce resources; e.g The water resources are very meager in this area. 贫乏的资源['mi:ɡə] |
| vicinity | 1. [ in the vicinity 就在附近; in the vicinity **of** xxx在xxx的附近] in the area around a particular place  e.g. The **fugitive criminal** was found **in the vicinity of** the **landing fill**. 逃犯在”垃圾场”附近被发现。  e.g. There used to be a **mill**磨坊 **in the vicinity**. 附近曾有一座磨坊  e.g. We chose the house for its **proximity to** the school / because it’s **in the vicinity of** that school 我们选中这所房子是因为它离学校近。  //mill: a building containing a large machine for crushing grain into flour磨坊 |
| 1. The state of being near in space or relationship; proximity: 附近邻近：关系上相邻 e.g. two restaurants are in close vicinity. E.g. Our two families are in so close vicinity 两家关系很近 |
| proximity | /prɒkˈsɪmɪtɪ/  [proximity **to** a place or person ] is nearness to that place or person. (地理位置上)邻近接近；（和人的）关系上近  e.g. Part of the attraction is Darwin's **proximity to** Asia. 达尔文港的部分吸引力在于她与亚洲比邻。  e.g. We chose the house for its **proximity to** the school / because it’s **in the vicinity of** that school 我们选中这所房子是因为它离学校近。 |

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| [ cock V.S. cork软木塞. 软木 ]   * n. 公鸡, an adult male chicken 公鸡, cock=rooster V.S. hen母鸡　e.g. A cock crowed in the distance. 远处有只公鸡在打鸣 * cock: an adult male bird of any kind 雄鸟，雄禽 * 龙头头目 cock e.g. He’s the cock of that **criminal syndicate**.　他是那个 黑社会 的龙头头目 * vt. 使朝上竖起；使朝上耸立；大摇大摆 * SEX ORGAN, informal, not polite a penis= cock 鸡巴，屌   e.g.   |  | | --- | | InterStar Airways Flight 293, landed at San Francisco International Airport (SFO), San Francisco, California, with the nose wheels cocked**机头朝上竖起** at 90 degrees, which **is upwards perpendicular to** the ground. | | Pilot: **“Pan-pan call/distress call”** “This is InterStar Two **Niner Tree**. I am two miles south of Oakland. The controls indicate that there is a landing gear **shock absorber** fault (//emergency of a mechanical failure). The landing gear is currently down I have **three green**. It tells me not to **retract收回 the gear**. I'm also showing a nose steering fault. It shows that the landing gear **is perpendicular to center (和xx垂直成直角),** that is 90 degrees off center. **Do you copy? Over**.”  ATC: **Copy that**, Two Niner Three. Stand by so that we can figure out a course of action for you. We may have you land at San Jose, which is the closest airport for you.  Pilot: I can go to San Jose or some other destination if it calls for that. Does San Jose **have crash, fire and rescue capability**? I want to know what the winds are as well down there. If I've got high **crosswinds** with **a cocked nose朝上竖起的机头**in the landing gear, I'm not very interested in going down there. | |
| ['bɒɪən**sɪ**] buoyan**cy** 〔物体在液体里的〕浮性; 〔液体的〕浮力 ; 自信乐观心情；（股票）保持高价或回升  **[ life buoy = life belt, life ring 救生圈 ]**  **[**[**buoyancy correction**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=buoyancy%20correction&lang=en)**浮力修正;** [**buoyancy factor**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=buoyancy%20factor&lang=en)**浮力系数; buoyancy force: 浮力 ]**  [词条图片](javascript:;)   1. the ability of an object to float in liquid, like water, sea〔物体在液体里的〕浮性 2. the power of a liquid to make an object float〔液体的〕浮力   e.g. Salt water has more buoyancy than fresh water. 盐水的浮力比淡水大。  e.g. Note that this includes the buoyancy of the bubble wrap, so it isn’t the real density.  考虑到汽泡纸（在空气中）具有一定的浮力，因此这并非它真正的密度  3. a feeling of happiness and a belief that you can deal with problems easily 自信；乐观  e.g. The survival of all on board appears to have been thanks to a combination of the plane remaining intact on impact and almost immediate assistance from at least seven water taxis and **tugs/tug boats** which **swarmed around** the jet. **Overwing emergency exit doors** (位于机翼边上的紧急出口) were opened quickly, and ­the **emergency slides/exit slides** were also opened shortly for **“jump and slide”.** Passengers either stepped straight into the life boats or stood in line on rafts木筏, or on top of the wings which acted as **­buoyancy['bɒɪənsɪ浮力** and **kept the plane afloat.** |
| **[ be worn into 磨损]**  e.g. Upon **touchdown**, the tires rapidly **deflated泄了气 and tore apart,** and all **undercarriages** (the wheels of an aircraft, train) **were worn 磨损into** the **axle['æks(ə)l] [车辆] 轮轴**. |
| buckle V) 变弯曲; 把(button, belt)扣起来 n. 皮带扣; (皮带等的) 带扣  e.g. There are two **buckles** at the front of my briefcase, see the gold-plated ones.  e.g. **Buckle the silver buttons** on your suitcase.  e.g. **Buckle your seat belt** please.  e.g. It's so hot in the West that **the scorching灼热的** heat is **breaking/shattering records**, causing massive power outages and prompting flight cancellations. **It was such a scorcher酷热的天/大热天!** Because of the **record-breaking/shattering** temperature, the heat could've been a factor as four lanes of Highway began to **buckle变弯曲** on Sunday. Drivers reported the giant **cracks/fissures/rifts [木] 裂缝；裂** forming on the road and the lanes were repaired. |
| 〔车辆或车轮〕打滑，失控滑向一侧 [skɪd] **skid;  skidded**   pt: skidded   pres part: skidding； [I] if a vehicle or a wheel on a vehicle **skids**, it suddenly slides sideways and you cannot control it. **[ (车)打滑冲出公路 skid off the road； skid off the hairpin turn 在 急转弯 处打滑冲了出去 ]**  e.g. The car **skidded suddenly** when she turned left on **hairpin turns**急转弯的时候**车打滑**了。  e.g. The bus **skidded off the road** and into a ditch. 公共汽车打滑冲出公路，掉进了沟里。  e.g**. Traction control** and dynamic **stability control** to help prevent the car from **skidding** or sliding.  Eg. The importance of landing gear  Landing gear is the mechanism that supports an airplane when it is on the ground. It allows the airplane to taxi, take off, and land. Without some form of landing gear, such as wheels, **skids滑胎, or floats(? 花车),** an airplane would not be able to take off and would have to land on its **belly** |
| **回声定位**echolo’cation /ˌɛkəʊləʊˈkeɪʃən/ echo =>echolo’cation is a system used by some animals, typically bats, dolphins, to navigate by determining the position of an object by measuring how long it takes for an echo to return from the object. 回声定位  e.g.  Most bats navigate by echolocation.  大多数蝙蝠通过 **回声定位** 飞行。   * e.g. Some bats with poor eyesight depend on echolo’cation/ˌɛkəʊləʊˈkeɪʃən/  to navigate. They emit squeaks[skwiːk]短促尖声 and gauge their environment based on the echo returned. Dolphins and shrews use it too. 一些弱视的蝙蝠依赖回波定位以导航。   e.g. Such surfaces reflect most of the bats’ echolocation/ˌɛkəʊləʊˈkeɪʃən/  回声定位 energy away from it, but some energy hits the surface **perpendicularly [‚pɜːpən’dɪkjʊlə],** sending an echo back directly beneath the bat. 这样的平面反射了大部分蝙蝠的声波，但是有一部分能量**垂直**撞击到表面上，声波回传至蝙蝠  e.g. Much of that echolocation sound is beyond the range of the human ear. 大部分回波定位的声音都超出了人耳能接收的频率。 |
| [‚pɜːpən’dɪkjʊlə] perpendicular = exactly vertical, perpendicularly   1. not leaning to one side or the other but exactly vertical = perpendicular 直立的，垂直的 **[ a perpendicular line 垂直线; a perpendicular wall of rock 直立的石壁 ]** 2. **〔线〕与xxx成直角/和xxx 垂直: be perpendicular to sth:** if one line is perpendicular to another line, they form an angle of 90 degrees.  e.g. (Solving a geometry quiz) See, that line **is perpendicular to** that rectangle. e.g. a road perpendicular to the highway 和那条公路垂直的道路 3. in the style of 14th- and 15th-century English churches, which are decorated with straight upright lines 〔14、15 世纪英国教堂〕垂直式装饰风格的   Derivative [dɪ'rɪvətɪv] word派生词: perpendicularly adv  e.g. Such surfaces reflect most of the bats’ **echolocation/ˌɛkəʊləʊˈkeɪʃən/**  **回声定位** energy away from it, but some energy hits the surface **perpendicularly [‚pɜːpən’dɪkjʊlə],** sending an echo back directly beneath the bat.  但是有一部分能量**垂直**撞击到表面上  e.g. InterStar Airways Flight 293, landed at San Francisco International Airport (SFO), San Francisco, California, with the nose wheels cocked at 90 degrees, which **is upwards perpendicular to** the ground.  E.g. Pilot: **“Pan-pan call/distress call”** “This is InterStar Two **Niner Tree**. I am two miles south of Oakland. The controls indicate that there is a landing gear **shock absorber** fault (//emergency of a mechanical failure). The landing gear is currently down I have **three green**. It tells me not to **retract收回 the gear**. I'm also showing a nose steering fault. It shows that the landing gear **is perpendicular to center (和xx垂直成直角),** that is 90 degrees off center. **Do you copy? Over**.” |
| retract, retraction, retractable  1.[T] if you retract something that you said or agreed, you regret saying that and want to claim that you did not mean it 收回，撤销〔已说的话或已答应的事 〕 **[ retract a statement: 收回声明; retract the accusation against sb:收回对sb.的指控； retract my words: 收回自己的话]**  e.g.  Mr. Smith hurriedly **sought** to **retract the statement**, but it had **just** been broadcast on national radio. 收回声明。E.g. He confessed to the murder but later **retracted his statement**. 他承认谋杀，但后来又翻供了。  2. [I,T] if part of a machine, like the landing gear of an aircraft or an animal’s body retracts or is retracted, it moves back into the main part （使）缩回，（使）缩入 **[缩回爪子: retract claws; 缩回飞机的起落架: retract the landing gear ]**  e.g. **The sea otter ['ɒtə] 海獭** can **retract the claws** on its front feet. 海獭能**缩回**前掌上的爪子。  E.g. **Torn muscles retract** and lose strength, structure, and tightness.  撕裂了的肌肉会**收缩**  e.g. At this point, you **can retract the flaps (side flaps)** of the aircraft.  e.g. **Retractable可收起的landing gear systems** may be operated either **hydraulically液压** or electrically, or may **employ** a combination of the two systems. An electrical **landing gear** retraction**缩回/收起** system utilizes an electrically driven **turbine[动力] 涡轮** for gear operation. Normally, the landing gear should be **retracted**缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring **an aborted takeoff弃飞**, the airplane could no longer be landed on the runway.  e.g. Many types of aircraft use **‘retractable’ landing gear**, which **retracts into** the fuselage of the aircraft during flight to decrease drag on the aircraft. **Retractable landing gear** often makes use of **hydraulics**, while emergency mechanical means are still available in the event of **hydraulic failure**.  Derivative words:  N) **[ a retraction[n o]f sth 收回xxx ; 收回他的言论: a retraction of his comments; ]**  e.g. The newspaper was forced to publish **a retraction[n o]f its allegations**. 这家报纸被迫发表声明**收回指控**。  e.g. Miss Pearce said she expected an unconditional **retraction[n o]f his comments** within twenty-four hours.  无条件**收回他的言论**。  Adj) retractable: a retractable part of something can be pulled back into the main part 可收起的，可缩回的 **[**  [**retractable launcher**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=retractable%20launcher&lang=en)**伸缩式发射架; retractable landing gear system: 伸缩式的飞机起落架;** [**retractable fibre**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=retractable%20fibre&lang=en)**收缩性纤维 ]**  e.g. a knife with a retractable blade 一把刀片可收起的刀 V.S convertible (car)可折叠的敞篷车 |
| N) 平安无事；[戏谑语]完整无损**[ safe and sound]**  e.g. The captain is the person who is the **pilot-in-command**责任机长 of an aircraft, and has the overall responsibility for the safe and efficient operation of the aircraft, including its crew. Passengers’ **safe and sound平安无事**is the top priority. |
| Spring弹簧 = > spring out  e.g. Gerard bent cautiously to the rat’s box—would it **spring out窜出来** or bite him?  e.g. To open the **upward opening passenger/crew entrance door,** follow these steps: **Press** the external handle trigger marked 'PUSH' to allow the door handle to **spring out(弹出来**). **Turn** the external handle **counterclockwise**. Lightly **pull on** the external handle to initiate **gas spring([机] 气弹簧**) operation to open door. |
| 扫雪机, 除雪机**snowplow = snowplough [,plaʊ],** is a vehicle which is used to **shovel用铲挖** and push snow off roads or railway tracks. 扫雪机    e.g. The temperatures dropped suddenly after 2 p.m., and so the rain turned to **sleet雨加雪** and then to snow.  The **snowplows/snowplough [**'sno,plaʊ] have been working nonstop to keep the runways clear of ice and snow, but the temperatures have continued to fall and the poor visibility and **whipping winds** are making it hard for even the **snowplows** to keep the runways clear. The air traffic controllers(ATC) are making contact with each aircraft **in the vicinity在…附近** to determine the **feasibility/viability** of landing at an airport farther south of Stansville, where the weather isn’t quite so bad and the visibility is better even though it’s a little **foggy**. |
| ( concourse  ['kɒŋkɔːs]:   1. a large hall or open place in a building such as an airport or train station〔飞机场或火车站等的〕大厅，大堂) **[ In the airport concourse; in the train station concourse ]** 2. formal a large crowd that has gathered together 聚集的人群 **[云集的人an immense concourse of people ]** e.g. An immense concourse of spectators (云集的观众) are rallying together at the Plaza. |
| 〔尤指不好的事情的〕开始[发作]  ['ɒnset] N.  **[the onset of sth bad/negative; with the onset of sth bad/negtiave随着xxx的开始/发作**  = the beginning of something, especially something bad or negative  **[随着金融危机的开始/发作 with the onset of the global financial crisis; 随着全球经济萧条的开始with the onset of the worldwide economic recession; with the onset of the Great Depression随着“经济大萧条”的开始]**  e.g. My mum got serious headache and her **cardiovascular [,kɑːdɪəʊ'væskjʊlə] 心血管的**problem revived with **the onset of winter 冬天的来临**  e.g. Sadly, everything changed dramatically **with the onset of the 2008 global financial crisis and the worldwide economic recession** that ensued. In fact, it forced the Big 3 automotive manufacturers to streamline operations by closing down a number of production plants. |
| ['hektɪk]  hectic   1. very busy or full of activity 繁忙的，忙乱的 **[ a hectic schedule; a hectic day]** e.g. I’ve had a pretty hectic day. 我忙乱了一整天。 E.g. a hectic social life 繁忙的社交生活   2. written language)  if your face is a hectic colour, it is very pink 〔脸〕潮红的 **[ the hectic flush on my face 潮红 ]** e.g. **the hectic flush** on her cheeks 她双颊的潮红 |
| ['gʊəmeɪ; 'gɔː-] ['ɡʊrme] /'ɡʊəmeɪ,ˋgurme/  gourmet, **where “t”不发音。**复数 gourmets  n. 美食家; 菜肴精美的  **adj. [only before noun 仅用于名词前,” [关于]美食佳酿的”]** producing or relating **[ a gourmet cook 美食厨师; gourmet dinners ]** |
| ethanol: ['eθənɒl, 'iːθənɒl] the type of alcohol in alcoholic drinks, which can also be used as a fuel for cars乙醇(燃料)  e.g. No cars in Brazil run on pure gasoline anymore. The government requires that all vehicles run on blended fuel of about one-quarter **ethanol ['eθənɒl, 'iː-]** .  采用含四分之一 乙醇的混合燃料  e.g. Ethanol is a common alcohol-based **fuel**. |
| **急转弯 [ hairpin turns] hairpin:发卡**  **e.g. In addition**, the 107.1-inch **wheelbase** and Gloonow **traction** give the driver added control on **hairpin turns** |
| **[off the charts (quiet awesome 打破旧记录；好极了)!]**  **e.g. Last but not least,** the superior **aerodynamics** and **sleek design空气动力流线型的设计** give the new Buick XZ3 a cool factor that’s **off the charts (好极了)!** |
| * 公共有限公司Public Limited Company, PLC * **国际合资企业Joint International Venture, JIV** * 街边小店corner shop |

# Lexical Table. Weather

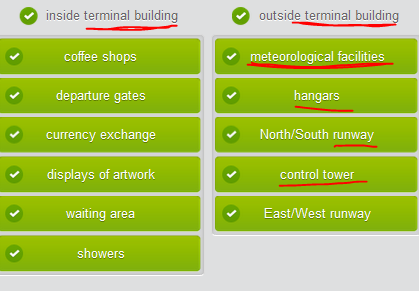
|  |  |
| --- | --- |
| 露点 | 露点 dew point: the temperature at which water vapour in the air becomes saturated饱和的 and water droplets begin to form  [词条图片](javascript:;)  ATC: (air traffic controller) Cessna 2345 Charlie Denver Ground runway Three Six Left is in use, wind 290 at 4, ceiling four thousand broken, visibility six miles, smoke and haze, temperature -2**, dewpoint** [**露点温度**](javascript:;)**-**3, altimeter 30.07. Be advised you have Lima. |
| 狂风暴雨的(天气) | inclement /ɪnˈklɛmənt/ inclement weather is unpleasantly cold or stormy. **[ inclement weather狂风暴雨的天气] V.S. treacherous weather: 变化莫测／危险的天气**  E.g. The conditions at the Stansville Airfield have deteriorated in the terrible weather this afternoon. Normally planes land on the East/West runways, but today **the prevailing winds [气象] 盛行风** have changed due to the storm. Planes should **land on Runway** 36 and **taxi to the airport terminal**. All departing flights have been cancelled or delayed due to the **inclement treacherous weather狂风暴雨的危险的(天气)**, so the only aircraft activity is the airplanes currently still in the air that are trying to land.  e.g. **Throngs of** jubil**a**nt **revelers**成群的 兴高采烈的 狂欢者 packed cities around the globe to usher in 2018 with public celebrations and fireworks, despite fears of terrorism and even the frigid/chilly **inclement weather狂风暴雨的天气** in some places. In New York, hundreds of thousands of people packed Times Square in the 9-degree Fahrenheit weather, with a **whipping wind** chill of 4 degrees below zero, to watch the 2018 ball drop. The **frigid/chilly temperature** in the **inclement weather狂风暴雨的天气** in U.S. made it the second coldest New Year's Eve ball drop on record in New York.  //flocks of birds; herds of horses/sheeps; throngs of people //cleft sentence: What I need is (that) you love me only forever. |
| 非常危险的变化莫测的(天气，水流) | Treacherous  1. If you describe someone as treacherous, you mean that they are likely to betray you and cannot be trusted. [ a treacherous person 一个背信弃义的人 ]  E.g. He publicly left the party and denounced its treacherous leaders. 遣责党内那些 背信弃义的领导人们。 2. If you say that something is treacherous, you mean that it is very dangerous and unpredictable. 非常危险的变化莫测的(天气，水流) **[ treacherous weather; treacherous water current ]**  e.g. The current of the river is fast flowing and treacherous. 河水的水流湍急而且变化莫测。  e.g. Five scuba divers were missing today after they dove into [treacherous] waters.  E.g. The conditions at the Stansville Airfield have deteriorated in the terrible weather this afternoon. Normally planes land on the East/West runways, but today **the prevailing winds [气象] 盛行风** have changed due to the storm. Planes should **land on Runway** 36 and **taxi to the airport terminal**. All departing flights have been cancelled or delayed due to the **inclement treacherous weather狂风暴雨的危险的(天气)**, so the only aircraft activity is the airplanes currently still in the air that are trying to land. |
| 风 | * wind * gale: a very strong wind 大风 * **whipping winds强风** * **(地球大气层的〕喷射气流，高速气流,一种特殊的强风 jet stream:** The jet stream is actually **a gale, very strong wind** that blows high in the Earth's atmosphere and has an important influence on the weather.   e.g. Clear Air Turbulence (CAT) is a dangerous air situation. Sudden **erratic不规则的不稳定的movement** of air masses when no clouds or other weather indicators are present.  It happens when areas of air moving at different speeds meet. Frequently Clear Air Turbulence (CAT) occurs above mountain ranges or at high altitudes where the **jet stream(地球高空的〕喷射气流，高速气流**flows.   * **headwind, tailwind, crosswind** * **prevailing winds ([气象] 盛行风)]** * **blowing winds** * **windfall: 天上掉的馅饼** * **wind shear:** stress on an aircraft in an area in which winds of different speeds and directions are close together 风切变, 乱流; a change in wind direction and speed between slightly different altitudes, especially a sudden downdraft .在稍微不同的纬度之间风向和风速的变化，尤指突然的下沉气流 * **microburst: [‘maɪkro,bɚst] 【气象学】旋气流，强烈且短时的下沉气流**   [词条图片](javascript:;)  e.g. **In-flight** emergencies due to natural disasters include events such as bird strikes, turbulence, atmospheric icing大气结冰, **wind shear风切变, 乱流, and microburst旋气流**.  e.g. The plane met serious **wind shear and microbursts** but finally it successfully **ditched on the water 水上迫降.**  e.g. Clear Air Turbulence (CAT) is a dangerous air situation. Sudden **erratic不规则的不稳定的movement** of air masses when no clouds or other weather indicators are present.  It happens when areas of air moving at different speeds meet. Frequently Clear Air Turbulence (CAT) occurs above mountain ranges or at high altitudes where the **jet stream(地球高空的〕喷射气流，高速气流**flows.  e.g. E.g. The conditions at the Stansville Airfield have deteriorated in the terrible weather this afternoon. Normally planes land on the East/West runways, but today **the prevailing winds [气象] 盛行风** have changed due to the storm. Planes should **land on Runway** 36 and **taxi to the airport terminal**. All departing flights have been cancelled or delayed due to the **inclement treacherous weather狂风暴雨的危险的(天气)** , so the only aircraft activity is the airplanes currently still in the air that are trying to land.  Wind 040 at 22 **gusting** to 28. The **blowing winds** are causing drifting snow to pile up on **taxiways**, so planes that have landed are having a hard time tax***ii***ng through the slippery surfaces or **slush雪泥**  to get to the **ramps** to **deplane/disemplane the passengers**. |
| 雪 | **Snow V.S. drifting snow[气象] 低吹雪；飘雪 V.S. sleet雨夹雪 V.S. slush雪泥**  **e.g.** You have a sudden change of runway conditions due to a snowstorm, with ice, **sleet雨夹雪**, **slush雪泥**, and **drifting snow飘雪；吹雪**. You must communicate this to the captain of the airplane coming in to land.  e.g. The weather forecasters have reported that this early winter storm should pass over the Stansville area in the next few hours, and that by morning the conditions will have improved enough for air traffic to continue. So the cancelled flights will be able to resume activity by tomorrow morning, provided the runways can be kept clear enough for takeoff, esp. use **snowplows['sno,plaʊ] 除雪机** to shovel and remove the **slush雪泥.** |

# Lexical Table: Airline industry personnel (roles and duties)

| **Airport staff** | **Workplace** | **Duties (use strong action verb to describe duties)** |
| --- | --- | --- |
| captain = pilot-in-command | Inside of the plane | e.g. The captain is the person who is the **pilot-in-command责任机长**of an aircraft, and has the overall responsibility for the safe and efficient operation of the aircraft, including its crew. Passengers’ **safe and sound平安无事**is the top priority.  e.g. U.S. airplane 1549 was struck by Canadian **geese** accidentally just 10mins after takeoff (still climbing to the **cruising altitude巡航告诉**). Then the **hydraulic failure液压失灵** caused the engine **going into a stall.** Luckily, the captain Sally, the **pilot-in-command责任机长**, decided to **ditch on the Hudson river [‘hʌdsən] 水上迫** //(飞机/汽车引擎的) 停止运转，熄火  **[ go into a stall ]** if a plane or car **goes into a stall**, its engine stops working.  **N) 平安无事；[戏谑语]完整无损[ safe and sound]** |
| pilot-in-command | Cabin of the plane | pilot-in-command责任机长  e.g. The captain is the person who is the pilot-in-command责任机长 of an aircraft, and has the overall responsibility for the safe and efficient operation of the aircraft, including its crew. Passengers’ **safe and sound平安无事**is the top priority. |
| Pilot: First office | Cabin of the plane | This position involves assisting the captain by monitoring the flight instruments, handling radio communication, watching for air traffic and taking over the flight controls when directed by the captain.  Assist pilot to monitor instruments and gauges in the dashboard; the radio communication. |
| Flight attendant, FA | Cabin of the plane | This airline employee works in **the cabin of the aircraft**, helping make the passengers feel safe and comfortable throughout the flight, like serving **in-flight drinks and food**.  **steward:** an **attendant** on a ship or an airplane. 乘务员 |
| Sky marshal  ['mɑːʃ(ə)l] | Cabin of the plane | This person is an **undercover便衣** **law enforcement official/agent执法人员** on board a commercial aircraft to counter hijackings or other criminal acts that would threaten a safe flight.  a specially trained person who carries a gun and whose job is to travel on a passenger plane and protect it from attacks by terrorist s  空中警察〔受过特殊训练，在客机上保护乘客不受恐怖分子袭击的携枪警察〕 |
| **Aircraft mechanic**  **机械师** | **works on the ground** | **Who works on the ground or in the hangar ['hæŋə] 飞机库；飞机棚for checking and repairing the aircraft.**  People in this position service, repair and inspect airplanes; discover defects/flaws that would **compromise the safety of the aircraft**危害飞机安全. They must have a thorough knowledge of all parts of airplanes, including the **fuselage机身**, engines, **propellers飞机或轮船的〕螺旋桨，推进器**, landing gear, **hydraulic equipment液压**, radio and radar instruments, and bodies. |
| ram**p a**gent | **works on the ground, mostly apron/tarmac** | [ **ramp** agent] **Who works on the ground**. People in this job are responsible for:   * guiding aircraft into the gate * loading, unloading and sorting **freight货运**and baggage from the **converyer belt [机] 输送带** on the **apron**/**tarmac**. * servicing aircraft lavatories厕所and potable water, * **de-icing the plane 给飞机去冰**in cold weather, and * **pushback** from the gate (preparation for the plane to take off) when the aircraft is ready for take-off.   **ramp**: the name of the area where aircraft are parked, unloaded, loaded, refueled or boarded. The personnel who is working in the ramp is called “ram**p a**gent”. |
| ticketing agent | **In the airport concourse** | A person in this position **sells tickets** at **the airport concourse** or downtown ticket offices. They also assign seats for passengers and rebook passengers who miss their flights. They often answer questions about airline schedules, **fares**费用, hotels and taxis. They check in passengers and handle their luggage. They announce departures and board passengers.  //( concourse  ['kɒŋkɔːs]: a large hall or open place in a building such as an airport or train station〔飞机场或火车站等的〕大厅，大堂)  V.S. Reservation agent |
| Reservation Agent (e.g. travel agent) |  | Reservation Agent This person **helps people book flights** on commercial airlines. By entering the destination, date, and time into the computer, this person can give potential travelers all of the desired information about the flights. |
| Airport mgmt. team | I  In the airport office | Oversee the entire facility, e.g. runway, apron/tarmac, PR (public relationship), what is most, the budget |
| Airport mgm team normally includes the following roles of staff:   * **airport manager:** This person oversees the management of the airport. He generally has no direct control over flying activities, but he does make sure that Federal Aviation Administration regulations are enforced. He supervises the maintenance of runways, apron/tarmac停机坪, and airport buildings, and oversees budgets, staffing and public relations. He must ensure that the airport is run safely and efficiently and that it provides good service to its community. * **Flight Dispatcher** (FD): This person is an employee of **a commercial airlines** who schedules flights and ensures that all Federal Aviation Administration rules are followed.  He checks weather conditions and fuel loads, determines best altitudes and routes, and examines **mechanics机械师** reports to ensure that aircraft are safe to fly.  He or she is located in an office in the airport, but not in the control tower. * [**ground staff地勤**] eg. Europe's **budget airline廉价航空** EasyJet flew into a storm Sunday after it emerged a member of **the ground staff地勤** at Nice airport in France had **punched out** one of its passengers in the face while he was holding a baby. * Air Traffic Controller (ATC空中交通**管制**员, working in **the air traffic control tower交通管制塔)** This is a government employee who **is in charge of** maintaining the safe and orderly movement of aircraft along major air routes and around airports **by giving pilots instructions** and advice as to height, speed and course of the aircraft.They are usually located in the **air traffic control tower.** |
|  |  |  |

# Lexical Table: Airport facilities/locations on an airfield

|  |  |
| --- | --- |
| Airport facilities/locations on an airfield |  |
|  | Main runway  e.g. Unless absolutely necessary, **ground control /ATC** will not give taxi instructions滑行指示 to pilots until **the landing roll** is complete. Unless otherwise advised, pilots should remain on **tower frequency** until **the runway is vacated(腾出来／空出来).**  e.g. The pilot has been asked to **vacate the Alpha1 runway腾出／空出跑道**.  **V.S. (飞机在空中的)航空跑道corridor** |
|  | secondary runway   * **pushback** the plane from the **Gate of the terminal building** to the “**taxiway/taxiing lane**” => stop till it **is taxiing to the correct “runway**” => on the **runway**, speed up till V1 to take off. * When the plane is to land, the reversed order: plane lands on the “**runway**” => gliding on the runway till the “**taxiway/taxiing lane** => then **it’s taxiing to the Gate of the terminal buildin**g.   **V.S. (飞机在空中的)航空跑道corridor** |
|  | 〔飞机的〕滑行道 taxiway:  ['tæksiweɪ]  the surface which an aircraft drives on to get to and from the **runway.**  v) taxi, tax**ii**ng on the runway  e.g. The plane is tax**ii**ng on the runway and will take off as soon as the speech reached V1.  e.g. The plane is normally gliding on the taxiway for few mins after landing.   |  | | --- | | * **pushback** the plane from the **Gate of the terminal building** to the “**taxiway/taxiing lane**” => stop till it **is taxiing to the correct “runway**” => on the **runway**, speed up till V1 to take off. * When the plane is to land, the reversed order: plane lands on the “**runway**” => gliding on the runway till the “**taxiway/taxiing lane** => then **it’s taxiing to the Gate of the terminal buildin**g. | |
|  |  |
|  | terminal building: the name of the building used for handling passengers that **may also contain immigration control and customs if it is an international airport** |
| The **concourse** area of the new terminal building | ['kɒŋkɔːs]: concourse   1. a large hall or open place in a building such as an airport or train station〔飞机场或火车站等的〕大厅，大堂) **[ In the airport concourse; in the train station concourse ]** 2. formal a large crowd that has gathered together 聚集的人群 **[云集的人an immense concourse of people ]** e.g. An immense concourse of spectators (云集的观众) are rallying together at the Plaza. |
| 机场过境区 | transit zone: 机场过境区  e.g. The departure of the flight to Havana came after an all-night vigil by journalists who were posted outside a hotel in the transit zone of the airport where Mr.  前往哈瓦那的航班起飞前，各路记者曾在机场过境区内的一家酒店外彻夜守望，据称斯诺登会入住这家酒店 |
|  | **baggage claim取行李的地方**: the name of the area where passengers **claim their luggage** on arriving at their destination |
|  | windsock /ˈwɪndˌsɒk/ A windsock is a device, consisting of a tube of colourful cloth mounted on a pole/post, **that is used at airports and airfields to indicate the direction and force of the wind. 风标** |
|  | air (traffic) control tower: the name of the tall narrow building with good visibility of the airfield which **enables “air traffic controllers, ATC**” to monitor all aircraft activity, both in the air and on the ground |
|  | **飞机库hangar['hæŋə]** : the name of the large building that is used to **house** aircraft during maintenance and repairs.  V.S. 车库, 汽车修理厂garage /ˈɡærɑːʒ/     1. A garage is a building in which you keep a car. A garage is often built next to or as part of a house. 车库 2. **A garage is a place where you can get your car repaired. 汽车修理厂 e.g.  Nancy took her car to a local garage for a check-up. 汽车修理厂检查。** |
|  | Security checkpoint: the name of the place within the airport terminal where all departing passengers and their **carry-on baggage** must be screened for security clearance  **// Checkin luggage V.S. carry-on luggage** |
|  |  |
|  | ramp: the name of the area where aircraft are parked, unloaded, loaded, refueled or boarded. The personnel who is working in the ramp is called “ram**p a**gent”.  [ram**p a**gent] **Who works on the ground**. People in this job are responsible for:   * guiding aircraft into the gate * loading, unloading and sorting **freight货运**and baggage from the **converyer belt [机] 输送带** on the **apron**/**tarmac**. * servicing aircraft lavatories厕所and potable water, * **de-icing the plane** in cold weather, and * pushback from the gate when the aircraft is ready for take-off. |
| 直升机升降坪  [词条图片](javascript:;) | helicopter =>直升机升降坪helipad /ˈhɛlɪˌpæd/ A helipad is a special apron or tarmac where helicopters/chopper can land and take off. 直升机升降坪  e.g Each house had a helipad for a fast evacuation. 每所房子都有一个供快速撤离用的直升机升降坪 |
|  | **passport control**: the name of the area in an international airport where **arriving** passengers show their official documents, like passports, allowing them entry into the country. |
|  |  |



e.g.

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| --- |
| Current Conditions at the Stansville Airfield  Request: You have a sudden change of runway conditions due to a snowstorm, with ice, **slush雪泥**, and **drifting snow飘雪；吹雪**. You must communicate this to the captain of the airplane coming in to land.  The conditions at the Stansville Airfield have deteriorated in the bad weather this afternoon. Normally planes land on the East/West runways, but today **the prevailing winds** have changed due to the storm. Planes should **land on Runway** 36 and **taxi to the airport terminal**. All departing flights have been cancelled or delayed due to the **inclement weather**, so the only aircraft activity is the airplanes currently still in the air that are trying to land.   * //snowplow ['sno,plaʊ]   The temperatures dropped suddenly after 2 p.m., and so the rain turned to **sleet雨加雪** and then to snow.  The **snowplows** have been working nonstop to keep the runways clear of ice and snow, but the temperatures have continued to fall and the poor visibility and high winds are making it hard for even the **snowplows** to keep the runways clear. The air traffic controllers are making contact with each aircraft in the **vicinity** to determine the **feasibility/viability** of landing at an airport farther south of Stansville, where the weather isn’t quite so bad and the visibility is better even though it’s a little **foggy**.  Wind 040 at 22 **gusting** to 28. The **blowing winds** are causing **drifting snow飘雪；吹雪** to pile up on **taxiways**, so planes that have landed are having a hard time tax***ii***ng through the slippery surfaces or **slush雪泥**  to get to the **ramps** to **deplane/disemplane the passengers**.  The weather forecasters have reported that this early winter storm should pass over the Stansville area in the next few hours, and that by morning the conditions will have improved enough for air traffic to continue. So the cancelled flights will be able to resume activity by tomorrow morning, provided the runways can be kept clear enough for takeoff, esp by shovelling and cleaning the **slush雪泥.**  However, due to the unstable conditions at the moment, no more planes will be taking off tonight. |

# Lexical Table\_Types of airplane

|  |  |
| --- | --- |
| commuter flight | 班车一样的飞机 |
| reconnaissance plane | 侦察reconnaissance /rɪˈkɒnɪsəns/ is the activity of obtaining military information about a place by sending soldiers or planes there, or by the use of satellites. 侦察  [ 侦察任务 a reconnaissance mission; reconnaissance airplane 侦察机 ]  **[ recce ['rekɪ] plane = reconnaissance plane (军事) 侦察机]**  => renaissance ['rɛnəsɑns] 文艺复兴（欧洲14至17世纪)  e.g. The helicopter was returning from a reconnaissance mission. 那架直升机执行完 一项 侦察任务 正在返  e.g two Navy helicopters equipped with sophisticated (最新最尖端的) reconnaissance devices will be deployed to do the scouring search-and-rescue task. [reconnaissance: ;An inspection or exploration of an area, especially one made to gather military information.  eg The reconnaissance plane 侦察机 equiped with sophisticated精密尖瑞的 night vision devices, worked through the night to pull passengers off the capsized ferry, one by one. An Italian navy medical team boarded the ship to aid passengers, some of whom had been suffering hypothermia and smoke suffocation/smother/choke, the navy said. The already cold conditions were worsened by the spray of plume of heavy smokes. from tugboat/towboat拖船 hoses as authorities attempted to douse the flames. 侦察；勘察：对某块地区进行的视察或探察，尤指为收集军事信息而进行的这种活动] // sophisticated 1. 高精密的尖端的(仪器) e.g. a sophisticated gauge 2. She's a shrewd精明的 and sophisticated圆滑的 businesswoman. |
| [ passenger flights客机V.S. commercial flights商用机 V.S. cargo flights 货机] | [ passenger flights客机 V.S. commercial flights商用机 V.S. cargo flights 货机V.S. civil/ civilian aircraft 民航]  e.g. Passengers at the world's busiest airport faced a second day of disruption on Monday after a blackout/power cut led to hundreds of fight cancellations, affecting tens of thousands of people. Power was restored overnight and a handful[l o]f passenger flights客机 resumed just after 06:00 local time (11:00 GMT) on Monday. Hundreds of other flights, however, were cancelled. The airport is the world's busiest, handling more than 250,000 passengers and almost 2,500 flights every day. But during its first hour of operation on Monday morning, fewer than a dozen commercial flights商用机 departed. A number of cargo flights货机had operated during the partial shutdown. |
| 滑行(或物), 滑翔机 | 滑行(或物), 滑翔机 glider: To move in a smooth, effortless manner: 滑动，滑行 eg The plane is putting down the "landing gear" and successfully landed; now it is gliding on the runway/tarmac. glider: 滑行(或物), 滑翔机 |
| drone | 1)A pilotless aircraft operated by remote control.无人驾驶飞机  2) A male bee, especially a honeybee, that is characteristically stingless, performs no work, and produces no honey. Its only function is to mate/sexually intercourse with the queen bee. 雄性蜜蜂，其特点是无螫针 eg The technology company announced Monday that it has acquired Titan Aerospace, a start-up founded in 2012 that makes high-altitude, solar-powered drones. |
| cargo plane | cargo plane货机; jetliner: 喷气客机; a jumbo jet.巨型喷气式飞机; |
| helicopter | [[词条图片](javascript:;)](javascript:;) 直升机升降坪 helipad /ˈhɛlɪˌpæd/  A helipad is a place where helicopters can land and take off. 直升机升降坪 |

# Lexical Table: Aviation jargons行话，术语

|  |  |
| --- | --- |
| **Aviation Term** | **Meaning** |
| (飞机在爬升或俯冲后) 水平飞行 | ['lev**lɔf**（注意连读）] level off/out  1.[PHRASAL VERB 动词词组](javascript:;)If a changing number or amount **levels off or levels out**, it stops increasing or decreasing at such a fast speed, it’s moving on steadily. 趋向稳定  e.g.  The figures show evidence that murders in the nation's capital are beginning to **level off/out.**.开始趋向稳定。  2.[PHRASAL VERB**(飞机在爬升或俯冲后) 水平飞行**](javascript:;)If **an aircraft levels off or levels out**, it travels horizontally esp in **cruising altitude巡航高度** after having been climbing in an upward direction or declining in a downward direction.  e.g.  The aircraft **levelled out/off** at about 30,000 feet, which is a safe **cruising altitude巡航高度**. 飞机在大约三万英尺的高度水平飞行 |
|  | \* airfield = An airfield is an area of ground where aircraft take off and land, especially **one used by military planes机场〔尤指军用机场〕**. It is smaller than an airport. 停机坪  V.S.  \* tarmac: the tarmac is an area with a surface made of tarmac柏油碎石, especially the area from which planes take off at an airport. 柏油碎石路面 (尤指飞机跑道) => tarmac = runway?  \* apron: the hard surface in an airport on which planes are turned around, loaded, unloaded etc  停机坪 => apron = ramp ?=> the personnel who’s working in an apron/ramp is **“ramp agent”.**  \* airspace = territoria[l a]ir: the sky above a particular country, that is legally controlled by that country领空 Canadian airspace 加拿大领 |
| tailwinds 顺风 | Winds that blow **in the direction of travel of an airplane**. They increase ground speed, while reducing time to destination.  **Note: Tailwinds顺风are dangerous in take-off and landing situations.** |
| headwinds 逆风 | Winds that blow **in the opposite direction of the airplane’s travel**. They decrease the speed of flight and increase the time required to get to a destination.  **Note:** Air traffic controllers(ATC) try to choose the runways for take-offs and landings based on the direction of the runway that will provide this type of wind. |
| crosswinds侧风 | /ˈkrɒsˌwɪnd/ A crosswind is a strong wind that blows **across the direction** that vehicles, boats, or aircraft are travelling in, and that makes it difficult for them to keep moving steadily forward. 侧风  Winds that have a **perpen’dicular/'pɝpən'dɪkjəlɚ/ component** to the line or direction of travel. It is particularly difficult to navigate take-offs and landings on a runway with winds blowing **perpendicular['pɝpən'dɪkjəlɚ]** to it. |
| Instrument Flight Rules (IFR)  V.S.  Visual Flight Rules  (VFR) | Regulations and procedures for flying an airplane with **ONLY reference to the instrument panel for navigation**.  Pilots (authorized to fly this way) can fly through clouds.  Most scheduled **commercial flights** fly under these rules. |
| Regulations and procedures for flying an airplane **with reference to visual aids for navigation.**  Pilots authorized to fly this way **are NOT allowed to fly through clouds**.  **Most private and recreational娱乐用飞机aircraft** use these rules when visibility is appropriate. The pilot is responsible for navigation, obstacle clearance, and separation rules based on what can be seen from the cockpit. |
| Clear Air Turbulence (CAT) | Sudden **erratic不规则的不稳定的movement** of air masses when no clouds or other weather indicators are present.  It happens when areas of air moving at different speeds meet.  Frequently Clear Air Turbulence (CAT) occurs above mountain ranges or at high altitudes where the **jet stream(地球高空的〕喷射气流，高速气流**flows.  //不规则的不稳定的 erratic: something that is erratic does not follow any pattern or plan but happens in a way that is not regular |
| Coordinated Universal Time (UTC) **or**   * **Zulu time / u/** | A coordinated univeral time system (UTC) or Zulu time is used in aviation so that all pilots are referring to the same time period regardless of crossing time zones.  The coordinated universal time (UTC) system used by pilots across all time zones is called Zulu time. |
| Flight Level (FL) | This is a standard measurement of the altitude of an airplane in hundreds of feet.  It is not necessarily the same as an airplane’s true altitude either above **mean sea level (MSL)** or above **mean ground level (MGL).** |
|  | **mean sea level (MSL)** |
|  | **mean ground level (MGL)** |
| Instrument Landing System (ILS) | Instrument Landing System (ILS): A ground-based instrument approach system designed to help aircraft **approach (飞机进场)** and land on a runway. |
| Instrument Meteorological Conditions (IMC) | An aviation flight category in which weather conditions require IFR flight rather than by using outside visual cues and references. This includes flying in clouds, bad weather, or at night. |
| Visual Meteorological  Conditions (VMC) | An aviation flight category in which weather conditions allow VFR flight. In these weather conditions, pilots have sufficient visibility to see other aircraft and the ground. |
| True Airspeed (TAS) | The speed of an aircraft in relation to the speed of the air surrounding it.  This can change depending on whether the aircraft is flying with headwinds, tailwinds, or crosswinds. |
| FSS: fight service station |  |
| ETA: estimated time of arrival |  |
| **18, 000 feet: one eight zero feet;**  **20, 000 feet: two zero zero** | **18, 000 feet: one eight zero**  **20, 0**00 feet: two zero zero |
| **(飞机)落地许可** | **[ (飞机)落地许可landing clearance]**  e.g. **Continue ( means “need to wait for “landing clearance”)**  **If the runway is obstructed or not vacated没有腾出来** when the aircraft makes its ‘**final’ report** at 4 nautical miles or less from **touchdown**, but is expected to be available in good time for the aircraft to make a safe landing, the ATC will delay “**landing clearance落地许可”** by telling the pilot to ‘continue.’  The controller may or may not explain why the **landing clearance落地许可**has been delayed, but the instruction to ‘continue’ is NOT an invitation to land and the pilot must wait for **landing clearance落地许可**before actually landing or initiate a “**missed approach”/go-around进场失败，复飞**. |
| **进场失败，复飞** | **[ a misse[d a]pproach => go around;**  ***initiate* a missed approach = start to *go around* ]**  e.g. **Continue ( means “need to wait for “landing clearance”)**  **If the runway is obstructed** when the aircraft makes its ‘**final’ report** at 4 nautical miles or less from **touchdown**, but is expected to be available in good time for the aircraft to make a safe landing, the controller will delay “**landing clearance落地许可”** by telling the pilot to ‘continue.’  The controller may or may not explain why the **landing clearance落地许可**has been delayed, but the instruction to ‘continue’ is NOT an invitation to land and the pilot must wait for **landing clearance落地许可**before actually landing or initiate a “**misse[d a]pproach”/go-around进场失败，复飞**.  e.g. Instructions to carry out **a missed approach** may be given to **avert /avoid an unsafe situation**.  When **a missed approach** is initiated, cockpit workload is **inevitably** high. Any transmissions to aircraft **（that is going around复飞 ）**shall be brief and kept to a minimum.  **In the event of “missed approach” being initiated by the pilot, the phrases, ‘going around’ or ‘declaring a misse[d a]pproach’ can both be used.** |
| **腾出／空出(跑道; 会议室\_** | * **[ 腾出／空出跑道: /  [veɪ’keɪt;/ vacate the No2 runway;** * **腾出／空出201会议室: vacate the R209 meeting room]**   e.g. **Vacating腾出来／空出来 Runway and Communicating After Landing** e.g. Unless absolutely necessary, **ground control /ATC** will not give taxi instructions滑行指示 to pilots until **the landing roll** is complete. Unless otherwise advised, pilots should remain on **tower frequency塔台频率** until **the runway is vacated(腾出来／空出来).**  e.g. The pilot has been asked to **vacate the Alpha1 runway腾出／空出跑道**. |
| (airfield)塔台频率 | (airfield)塔台频率 **[tower frequency]**  e.g. Unless absolutely necessary, **ground control /ATC** will not give taxi instructions滑行指示 to pilots until **the landing roll** is complete. Unless otherwise advised, pilots should remain on **tower frequency塔台频率** until **the runway is vacated(腾出来／空出来).** |
| 交流电; 直流电 | AC: alternating current V.S. DC: direct current  AC is used to refer to an electric current that continually changes direction as it flows  V.S.  DC is used to refer to an electric current that always flows in the same direction. 直流电 |
| **飞机最后进场landing前的报告** | **[ ‘long final’ report: 飞机最后进场landing前的报告**]  e.g. **Approach飞机进场(to the runay for landing) and Landing**  **A ‘long final’ report** is made when making **a straight-in approach飞机进场(to the runay for landing)** at about 15 kilometers from **touchdown飞机着陆**.  A ‘final’ report is made when an aircraft turns onto **the final approach** within 7 kilometers of the runway.  The **landing approach clearance** will include the runway designation. |
| 航海日志；航空日志 | 航海日志；航空日志 logbook   [‘lɔɡbʊk]  e.g. Fill out the logbook for this flight.  [词条图片](javascript:;)  e.g.   |  | | --- | | Post-flight checklist:   1. cool down your **engine** for approximately one minute before turning it off. 2. At this point, you can **retract the flaps** 收回/缩回侧翼of the aircraft. 3. Then you need to turn off the **electric fuel pump燃油泵**. 4. Then cut off the **mixture idle cut-off** .  5. The last thing you do is turn of the **master switch** that controls all electronic devices. 6. Fill out the **logbook航空日志** for this flight. 7. Record the **Hobb’s meter**, which tells mechanics how much time the aircraft has been in operation.  8. After that, you just need to park the aircraft in the **hangar飞机库** . | |  | |
| (车辆、飞机等的)侥幸免撞脱险；死里逃生 | (车辆、飞机等的)侥幸免撞, 侥幸脱险；死里逃生near misses = close calls  e.g. Emergencies involving human errors include **near misses, close calls**, fires, bombs, hijacks, and onboard medical emergencies. |
| 阻塞的飞机跑道/高速公路/马路 | **[ obstructed runway; obstructed highway; obstructed road]**  **V.S.** [**ʌnəb**'strʌktɪd] unob**structed [ unob’structed runway; unob’structed road ]**  e.g. After a few more minutes, he landed safely on the [**ʌnəb**'strʌktɪd] **unob’structed runway (runway that has been cleared of other aircrafts and vehicles)**.  e.g. **The No.6 Runway is obstructed** currently, so the pilots have got to turn to the **holding pattern** before approaching. The plane is assigned to wait in the **holding point** Alpah1 (A1).  e.g. Runway is **obstructed** and the pilot gets the instruction from ATC “Go around”. |
| (飞机/汽车引擎的) 停止运转，熄火 | (飞机/汽车引擎的) 停止运转，熄火  **[ flame out = stall = go into a stall ]** if a plane or car **goes into a stall**, its engine stops working. **[ plane goes into a stall; car goes into a stall ]**  e.g. U.S. airplane was struck by Canadian **geese** accidentally just 10mins after takeoff (still climbing to the cruising altitude). Then the **hydraulic failure液压失灵** caused the engine **going into a stall.** Luckily, the captain, the **pilot-in-command责任机长**, decided to **ditch on the Hudson river  [‘hʌdsən] 水上迫降**  eg The engine **flamed out/stalled/went into a stall熄火**, the propeller螺旋桨 stopped working. The plane crashed and failed to **ditch on the water**. |
|  | * “mayday, mayday”: an internationally recognized distress signal used in radio communications for life-threatening emergencies * 7700: is an **emergency call** that is sent by pilots to tower controller, similar with the distress call or mayday mayday * “pan-pan call” = distress call: a distress call for urgent situations that are not life-threatening * Distress call |
| (无线电学)飞机的进场 频率 | [ (radiote’lephony) **approach frequency**]: the wavelength on which an Air Traffic Controller (ATC) and a pilot communicate during landing  e.g. The pilot was advised to switch to **an advisory frequency** and to cancel instrument flight rules(IFR) on **the approach frequency**. |
| 〔物体在液体里的〕浮性; 〔液体的〕浮力 ; 自信；乐观心情；（股票）保持高价或回升 | ['bɒɪən**sɪ**] buoyancy  〔物体在液体里的〕浮性; 〔液体的〕浮力 ; 自信乐观心情；（股票）保持高价或回升 [ life buoy = life belt, life ring ] [[buoyancy correction](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=buoyancy%20correction&lang=en) 浮力修正; [buoyancy factor](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=buoyancy%20factor&lang=en) 浮力系数; buoyancy force: 浮力 ]  [词条图片](javascript:;)   1. the ability of an object to float in liquid, like water, sea〔物体在液体里的〕浮性 2. the power of a liquid to make an object float〔液体的〕浮力   e.g. Salt water has more buoyancy than fresh water. 盐水的浮力比淡水大。  e.g. Note that this includes the buoyancy of the bubble wrap, so it isn’t the real density.  考虑到汽泡纸（在空气中）具有一定的浮力，因此这并非它真正的密度   1. a feeling of happiness and a belief that you can deal with problems easily 自信；乐观 |
|  |  |
| [clear to take off;  Clear to land | * it's clear to take off 　一切就绪，准备起飞 * it’s clear to land |
| 航空飞机学的；飞机驾驶学的 | nautical /ˈnɔːtɪkəl/  Nautical means relating to ships and sailing. 航海的  V.S.  aeronautical  [,eərə'nɔ:tɪkl] adj. 航空飞机的；航空飞机学的；飞机驾驶学的Aeronautical means involving or relating to the design and construction of aeroplanes.  //aerodynamics: 空气动力学  [ the aeronautical research laboratory 航空飞机实验室; aeronautical chart 航空路线图/地图 ]  e.g. Airspace/territorial air领空 is further divided into classes that range from A to G. The airspace classification领空分级 is determined by looking at aero’nautical charts航空地图.  Each class of airspace/territorial air has specific rules for flying.  Generally, above an airport or an urban area, stricter rules apply to low-flying aircraft, but as the altitude increases, the rules become less strict or even a little lenient.  Specifically, each different class of airspace/territorial air has rules for whether aircraft should be flown Instrument Flight Rules (IFR) or Visual Flight Rules (VFR).  [词条图片](javascript:;) |
| 领空 | [ˈeəspeɪs] airspace = territoria[l a]ir, the sky above a particular country, that is legally controlled by that country 领空 [ Canadian airspace/territorial air 加拿大领空 ]  e.g. Airspace/territorial air领空 is further divided into classes that range from A to G. The airspace classification领空分级 is determined by looking at aero’nautical charts航空地图.   Each class of airspace/territorial air has specific rules for flying.  Generally, above an airport or an urban area, stricter rules apply to low-flying aircraft, but as the altitude increases, the rules become less strict or even a little lenient.  Specifically, each different class of airspace/territorial air has rules for whether aircraft should be flown Instrument Flight Rules (IFR) or Visual Flight Rules (VFR). |
| (飞机在空中的)暂留点；等待点 | [holding point: (飞机在空中的)暂留点；等待点  e.g. ATC’s instruction: Cessna 2345 via the holding point A1(“Alpha”), one aircraft to depart before you from the holding point A2(“Alpha”) .  Pilot: Roger, via the holding point A1(“Alpha”) , number two for departure, Cessna 2345. . => Repeat ATC’s instruction    e.g. The Cathy 2356 pilot will not be able to land immediately, so must go into a holding pattern. It will wait via the holding point A1 for two mins. (2min later). The plane is staring to approach the runway.  e.g. Runway is obstructed currently, so the pilots have got to turn to the holding pattern before approaching. The plane is assigned to wait in the holding point Alpah1 (A1). |
| (飞机在空中的)航空跑道 | (飞机在空中的)航空跑道corridor: a restricted tract of land for the passage of trains. 铁路线：铁路经过有限的土地; Restricted airspace for the passage空中航空跑道of aircraft.空中航空跑道：飞机通过的有限空间 |
| 廉价航空 | 廉价航空, 廉航budget airline;  eg We know that ChunQiu Air is a famous budget airline.  E,g, Europe's budget airline廉价航空 EasyJet flew into a storm Sunday after it emerged a member of the ground staff地勤 at Nice airport in France had punched out one of its passengers in the face while he was holding a baby. |
| 红眼航班 | red eye= 熬夜和哭泣，充血（血丝)了的眼睛; 夜间飞行的航班，又被称为红眼航班 e.g. I took **the red eye** to Singapore. 我是做红眼航班去洛杉矶的。  V.S.  红眼病≠ red eye; 红眼病= pink eye: pinkeye /ˈpɪŋkˌaɪ/: [N](javascript:;)an acute 急性的contagious inflammation发炎 of the conjunct iva of the eye, characterized by redness, discharge, etc: usually caused by bacterial infection 传染性结膜炎 (Also called acute conjunctivitis) |
| 行李 | **[ the checkin luggage V.S. carry-on luggage手提随身行李 ]**  [ 机场里取行李的地方 **baggage claim**: is the name of the area in airport where you can **collect and claim your check-in luggage**, not including the **carry-on luggage**]  e.g. According to the cabin rules of aviation, you must put your **carry-on luggage** in the **overhead compartment o**r under your seat. |
| cruising altitude | When the plane climbs to the "cruising altitude"巡航海拔, the plane can be switched to "auto pilot".  18, 000 feet: one eight zero feet  20, 000 feet: two zero zero feet |
| high altitude conditions | 高原反应 |
| veer off the course | veer off the flight course = deviate from the flight course: 偏离航道 [veer: To turn aside from a course, direction, or purpose; swerve: 转向，改变方向：从某道路、方向或目的偏离出来；改变方向： eg The pilot maneuvered the plane and veered off the course to South in order to dodge the thunder and storm. |
| de-icing | 给〔汽车挡风玻璃或飞机机翼〕除冰 [ de-ice the plane; de-ice the windscreen of the car; [de-ice control](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=de-ice%20control&lang=en) 防冻控制器 ; de-ice the coffee给咖啡去冰]  de-ice: to remove the ice from something, especially a car windscreen/windshield or the wings of an aircraft; De-icing is defined as removal of snow, ice or frost from a surface.  V.S.  Anti-icing 抗冻is understood to be the application of chemicals that not only de-ice, but also remain on a surface and continue to delay the reformation of ice for a certain period of time, or prevent adhesion of ice to make mechanical removal easier.  e.g. However, it may increase the need to de-ice planes more often in the future, they say.  e.g. The company has also tested modified versions of its IceController to de-ice car windshields/windscreen and airplane wings.  以将其应用于汽车风挡玻璃和飞机机翼的除冰工作。 |
| 取消起飞/放弃起飞 | (the plane) aborts takeoff 取消起飞; an aborted takeoff  e.g. American Airlines spokeswoman said Flight 383 was bound/heading for Miami when it aborted takeoff due to an engine-related issue.  e.g. e.g. The captain just announced an aborted take-off 取消起飞before the plane would reach the V1 speed and will go around复飞，重飞 in 2 mins.  e.g. Retractable可收起的landing gear systems may be operated either hydraulically液压 or electrically, or may employ a combination of the two systems. An electrical landing gear retraction缩回/收起 system utilizes an electrically driven turbine[动力] 涡轮 for gear operation. Normally, the landing gear should be retracted缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring an aborted takeoff弃飞, the airplane could no longer be landed on the runway. |
| 飞机进场(准备着陆) | [ 飞机进场(准备着陆) approach (the runway, for landing) ]  e.g. Instrument Landing System (ILS): A ground-based instrument approach system designed to help aircraft approach (飞机进场) and land on a runway. |
|  | [ include instruction ]  e.g. |
| disorientation | 迷失方向; disorient: 使失去方向感, |
| hijab | The headscarf worn by Muslim women, sometimes including a veil that covers the face except for the eyes. 海加布：穆斯林妇女穿戴的头套，有时包括一个除了眼部之外可以遮掩脸部的面罩 |
| auto-pilot | 自动驾驶 eg When the plane climbs to the "cruising altitude"巡航海拔, the plane can be switched to "auto pilot"/"engine autopilot" |
| Hypoxia ?? | deficient in/lack of the amount of oxygen that support body tissues. 缺氧症：到达人体组织的氧气量不足 [proficient: skilled 熟练的，精通的; deficient:inadequate in amount or degree; insufficient: 缺乏的  V.S. hypothermia |
| 禁飞 | ground the airline; ground the air traffic ; [ the ground stop ] |
| stunt; stuntman; | 1. 引人注目的噱头 A stunt is something interesting or funny that is done in order to attract public attention and get publicity for the person or company responsible for it. [（影片,小说）宣传噱头 promotional stunt ]e.g. In a bold promotional stunt for the movie, he smashed his car into a passing truck. 在那部影片大胆的宣传噱头中。 2. (电影中的) 特技动作 A stunt is a dangerous and exciting piece of action in a movie, stunt => stunt man特技表演者; 特技替身演员: A stuntman is a man whose job is to do dangerous things, either for publicity, or in a movie instead of an actor so that the actor does not risk being injured. E.g. Sean Connery insisted on living dangerously for his new film by performing his own stunts. 表演他自己的特技动作而冒险。 3. V to perform a stunt or stunts 表演杂技 4. 阻碍 If something stunts the growth or development of a person or thing, it prevents or hinder/hamper it from growing or developing as much as it should. e.g. The heart condition had stunted his growth a bit. 心脏病已经有点儿阻碍他的发育。4.ADJ 受阻碍的 stunted [ 生长受阻 stunted growth; 发展受阻 stunted development ] e.g. Damage may result in stunted growth and sometimes death of the plant. 损害会导致植物生长受阻，有时还会导致死亡。 E.g. The PM’s oversight 疏忽results in the stunted development for our new project. |
| rotate | The plane brings the tires up and is going to take off 抬轮（起飞） eg The plan is gliding/taxiing/sliding on the runway, then rotate, and then take off. //taxiing v.s taxing: A taxing task or problem is one that requires a lot of mental or physical effort. 费劲的(任务，活） e.g. It's known that DP is such a axing project 很费劲的项目 |
| do you copy? | If you hear me, pls give me response 听到请回复我？ Normally when the airline tower controllers ask the pilot "do you copy" and wanna get feedback from the pilot to confirm the connection between tower controllers and the pilot is under control. Eg "Do you copy"; "Roger" or "Copy that" 收到 |
| Roger/affirmative | [ Roger / Affirmative ] Used especially in radio communications to indicate receipt of a message.知道了，已收到了：尤用于无线电通讯中表示收到讯息的答语 |
| way-point | The plane is reaching its second way-point. |
| N) 触地时刻：着陆的飞机或太空飞行器与着陆平面的接触或接触的时刻 | touchdown; touch down: The contact, or moment of contact when a landing aircraft or spacecraft touch the landing surface. 着陆的飞机或太空飞行器与着陆平面的接触或接触的时刻  e.g. The plane touchdown is the critical moment during the whole flying; on which most air crash happens normally.  e.g. Upon the plane touchdown, the tires rapidly deflated泄了气 and tore apart, and all undercarriages (the wheels of an aircraft, train) were worn 磨损into the axle['æks(ə)l] [车辆] 轮轴.  e.g. Approach飞机进场(to the runay for landing) and Landing: A ‘long final’ report is made when making a straight-in approach at about 15 kilometers from touchdown.  A ‘final’ report is made when an aircraft turns onto the final approach within 7 kilometers of the runway.  Eg The space shuttle was released and began a seven-hour controlled descent to the comet surface. At approximately 1600 GMT, the lander touched down on the comet surface, despite a few technical glitches/snag技术小失灵/小故障. After landing, there was a big celebration with jubilant cheers.  // ['dʒuːbɪl(ə)nt] jubilant adj. 欢呼的；喜洋洋的 |
| inflate  V.S.  deflate | inflate the life vest/jacket; eg Do not inflate the life jackets 给救生衣充气; inflate the ballnon给气球充气 economic inflation:通货膨胀 |
| terrain | 地形; A "Low Terrain" waring will pop up if the plane is close to land or other object. |
| observatory | A building, a place, or an institution designed and equipped for making observations of astronomical, meteorological, or other natural phenomena.观测所，气象台，天文台  Observatory: A structure overlooking an extensive view. 观察台，了望台，望楼：俯瞰广阔景象的建筑 |
| 下飞机 | Plane => [diː'pleɪn] deplane = disemplane [,dɪsɪm'pleɪn vi. 下飞机 to get off a plane下飞机]  V.S. Sb. [ ['dɪsɪm'bɑrk] disembark from the plane] V.S. [ embark on the plane/train/ship ]  e.g. When you deplane/disemplane, assuming you checked luggage, you have to wait around for your bags (assuming they’ve arrived where you have), and oftentimes sit around with no idea where it is or when it’s coming.  e.g. Oh, that' great ! After your help , I will find my connecting flight soon After we deplane/disemplen . thank you !那太好了！下飞机后我应该能很快找到转乘的航班，谢谢！  e.g. The captain advised the cabin crew that in the event that the nose gear collapsed, evacuation from the front doors was not available so everyone would deplane/disembark from the rear exits. |
|  |  |
| maneuver | A controlled change in movement or direction of a moving vehicle or vessel, as in the flight path of an aircraft. 操纵：机动车辆在动作或方向上的节制性改变，如飞行器的飞行路线上; maneuvered the car through traffic. 在街道上操纵着汽车; eg The pilot maneuvered 操纵 the plane and veered off to South in order to dodge the thunderstorm. eg The pilot maneuvered操纵 the plane and tried to bring up the nose.机鼻 // maneuvers/ruses [ru:z, ru:s]/artifices['ɑ:tifis]/tricks 花招伎俩 |
| fireball | * + 1. 火球; The plane crashed and pitched into the ocean, a fireball arised…     2. [美口]工作起来劲十足的人, 精力充沛的人 |
| long haul; medium haul | A long distance: 很长的一段距离： It is a long haul from New York to Los Angeles. 从纽约到洛杉矶的距离很远 A long period of time: 很长的一段时间： Over the long haul the candidates performed well. 在很长的一段时间里，候选人表现得不错 |
| 飞机禁止起降程序 | [ ground stop] 飞机禁止起降程序  e.g. A power outage at the world's busiest airport left thousands of passengers stranded in dark terminals and in planes sitting on the tarmac, bring the transportation hub into a standstill, as a ground stop for Atlanta's Hartsfield-Jackson International disrupted air travel across the United States.  e.g. The ground stop led Southwest Airlines to cancel all operations in and out of Atlanta for the rest of the day, spokesman Brian Parrish said. Customers are being offered re-bookings without fare differences, he said.  United and American Airlines also suspended operations to and from Atlanta for the rest of Sunday. Delta, which has its headquarters and largest hub in Atlanta, canceled more than 900 Delta mainline and regional flights as a result of the ground stop. |
|  | Decompress:  To relieve of pressure or compression. 解除…的压力;  To adjust to normal atmospheric conditions after being exposed to increased pressure. 使减压：在增强气压作用下后，调整至正常的大气状况  **V．S．Cabin depressurization机舱失压** |
| touchdown; touch down | The contact, or moment of contact, of a landing aircraft or spacecraft with the landing surface. 触地时刻：着陆的飞机或太空飞行器与着陆平面的接触或接触的时刻 The plane touchdown is the critical moment during the whole flying; on which most air crash happens normally. Eg The space shuttle was released and began a seven-hour controlled descent to the comet surface. At approximately 1600 GMT, the lander touched down, despite a few technical glitches/minor malfunction/snag. After landing, there was a big jubilation and celebration. |
| go around | 复飞，重飞 (slang): When your plane is reaching the mininum altitude, pilot must decide whether to land or go around重飞  e.g. The captain just announced an aborted take-off 取消起飞before the plane would reach the V1 speed and will go around复飞，重飞 ( in 2 mins.  e.g. |
| charter flight v.s. scheduled flight | The hiring or leasing of an aircraft, a vessel, or other vehicle, especially for the exclusive, temporary use of a group of travelers. 包租，包船 (the charter boat)，包机 (the charter flight) V.S. (scheduled flight)  eg A CDC staff member was recently flown home on a private charter after spending time in close proximity with another health care worker who tested positive for Ebola virus. e.g With just hours to spare, the Nigerian Olympic football team will travel to Brazil on Thursday to make its match against Japan in Manaus. Thanks to a tab temporarily picked up by Delta Air Lines for the charter flight, the stranded搁浅的 team is expected to land in Brazil at 2 p.m. local time. This gives the team just enough time to clear customs and stretch before kickoff at 9 p.m.  e.g Originally, the team was supposed to fly out July 29, manager said. But an unpaid charter flight bill kept the team grounded in Atlanta, according to CNN Atlanta affiliate CBS 46.  //A strand of something such as a strand of hair, a strand of wire, or a strand of thread is a single thin piece of it. (头发、电线或纱线的) 缕 |
| [ Brace for impact 碰击撞击 ] | The striking of one body against another; collision. 碰击，撞击：一个物体对另一个物体的击打；  Eg "Brace for impact 碰击撞击", announced by pilot when the plane is ditching on the water作水上迫降。 The force or impetus transmitted by a collision. 冲击力：由碰撞而传递的力量或动力 The effect or impression of one thing on another: 影响：一个事物对另一个事物的影响或印象： still gauging the impact of automation on the lives of factory workers.仍然在估测自动化对工厂工人生活的影响 |
| brace | To increase the tension of. 拉紧 The plane is landing emergently, and the flight attendants (FA) shouted "brace, brace, brace". Eg "Brace for impact 碰击撞击", announced by pilot when the plane is ditching on the water作水上迫降。 //ditch sb./sth = abandon sb/sth 抛弃 e.g. Samsung has entirely ditched/abandoned the Galaxy Note 7 in the hope of limiting the fallout from（不好的结果） its glitchy/faulty smartphone that bursts in to fires simultaneously. |
| braces /tooth braces:牙箍 A dental appliance, constructed of bands and wires that is fixed to the teeth to correct irregular alignment. [dental floss;牙线] |
| watershed | Watershed is a critical point that marks a division or a change of course; a turning point: 分水岭，转折点：标志着分界或过程改变的重要关头 |
| steep | Having a sharp inclination; precipitous. 陡的：大幅度倾斜的；陡峭的 |
|  | At a rapid or precipitous rate of ascending or descending 急剧升降的 eg The plan is bringing up its nose steeply and then quickly plunged, finally it pitched into the ocean. |
| vent; ventilation | The replacement of stale or noxious/toxic air with fresh air. 通风处; The mechanical system or equipment used to circulate air or to replace stale or toxic air with fresh air.通风设备 |
|  | 充气或充氧，如血液 |
| snap | To break suddenly with a brisk, sharp, cracking sound. 喀嚓折断：突然间折断 eg The bamboo snapped suddently. Eg The cable snapped suddently. |
| stuffy: 老顽童 | Lacking sufficient ventilation. 不通气的：缺乏新鲜空气的 |
|  | Having the respiratory passages blocked: 窒息的：呼吸通道被堵塞的： a stuffy nose. 堵住的鼻子 eg I got a serious cold and have a stuffy nose; my sound is nasal鼻音的 now. |
|  | Dull and boring: 枯燥无味的： a stuffy lecture; a stuffy person |
| scour | To clean, polish, or wash by scrubbing vigorously 使劲的磨擦洗净、擦亮或者洗：scour a dirty oven. 使劲的擦洗脏炉灶; eg a growing number of airplanes scoured/combed through the south Indian Ocean in the search for Malaysia Airlines Flight 370; eg, The location recorded by the satellite was within the search area and it has been scoured Wednesday by a dozen aircraft from six nations. |
|  | To remove by scrubbing擦掉 eg, scour grease from a pan. 把油垢从锅上擦掉 |
|  | To remove dirt or grease from (cloth or fibers) by means of a detergent. 用洗涤剂把（衣服上或纤维）上的脏物和油垢洗掉; eg,Wo, this detergent is so powerful and it can completely scour the grease from clothes. |
| swerve; veer off | 转向：从或使从正轨偏向一边 To turn aside from a straight course; veer off the direction and deviate from the straight course; eg When the aircraft prepared to land, it swerved boz of the "wind shear". The air traffic control tower immediately lost contact with the plane. Unfortunately, the plane crashed and pitched/plunged into the ocean坠落. eg When the plane is landing, it swerved suddently coz of the terrible weather; finally the plane is utterly out of control and pitched坠落 into the ocean…crashed. [swerve: veer off the direction and deviate from the staight course; utterly: absolutely] |
| pitch | The plane is out of pilots' control, finally it crashed and pitched/plunged into the ocean坠落 ;  V.S.  ditch on the water/ocean = the plane got the emergency landing on the water 使（飞机）作水上迫降  e.g. U.S. airplane 1549 was struck by Canadian geese accidentally just 10mins after takeoff (still climbing to the cruising altitude巡航告诉). Then the hydraulic failure液压失灵 caused the engine going into a stall. Luckily, the captain Sally, the pilot-in-command责任机长, decided to ditch on the Hudson river  [‘hʌdsən] 水上迫 //(飞机/汽车引擎的) 停止运转，熄火  [ go into a stall ] if a plane or car goes into a stall, its engine stops working. |
|  | [ pitch attitude] [航] 俯仰姿态  e.g. When the plane is approaching the runway for landing, the landing gear is extended by placing the gear selector switch in the GEAR DOWN position. As the landing gear extends, the airspeed will decrease and the pitch attitude [航] 俯仰姿态may increase. During the several seconds it takes for the gear to extend, the pilot should be attentive to any abnormal sounds or feel. The pilot should confirm that the landing gear has extended and locked by the normal sound and feel of the system operation as well as by the gear position indicators in the cockpit. |
|  | (n)沥青; Wo, I't so hot that the pitch covering the road is almost melted… |
|  | high-pitched: 1) high in pitch, as a voice or musical tone. 声调高的, 声音尖锐的 Eg high-pitched voice/noise/sound 2)Steeply sloped; eg high-pitched roof 有陡坡地屋顶 3）Marked by or indicating intense emotion: 激烈的：a high-pitched debate.激烈的辩论 |
|  | football pitch 球场: The length of the football pitch for international adult matches is in the range of 100–110 m (110–120 yd) and the width is in the range of 64–75 m (70–80 yd). |
| a thunder from the clear sky | I got an astonished news that xxx; It's kind of "a thunder from the clear sky" 晴天霹雳 |
| haystack | It's kind of "finding/looking for a needle in a haystack" 大海捞针 |
| affirmative | Asserting that sth is true or correct, as with the answer “yes”: 肯定的：断言某事是真实的或正确的，如回答“是”; 肯定的, (对正式辩论中的问题)表示赞成的, (态度, 方法等)积极的, 乐观的, 怀有希望 |
| circle/hover | 盘旋 eg The plane needs to circle around for another 10 mins and then goes to land coz of the traffic jam in the tarmac. |
| beacon | A signaling or guiding device, such as a lighthouse, located on a coast. 灯塔：位于海岸用以发送信号或导航的装置，如灯塔; A radio transmitter that emits a characteristic guidance signal for aircraft. 一种向飞机发送特殊导航信号的无线电传送装置 |
| 失事船只残骸 | flotsam and jetsam: Wreckage or cargo that remains afloat after a ship has sunk. 漂浮物：沉船后仍漂浮在水面上的残片或货物 |
| calamity | calamity: is an event that brings terrible loss, lasting distress, or severe affliction/pain痛苦; a disaster, catastrophe: 灾难： 痛苦的事件；一场灾难： A hurricane would be a calamity for this low-lying coastal region. ; distress resulting from loss or tragedy. 不幸：由于损失或不幸而导致的极度痛苦 V.S. 灾祸(天灾) plague: is any large scale calamity[kə'læməti]灾难 or catastrophe (especially when thought to be sent by God) V.S. catastrophe: a terrible event in which there is a lot of destruction, suffering, or death 灾难，大祸，严重的不幸 //afflict sb = torture sb, make sb painful, bring sb. a sort of spiritual torture. |
| lane, alley | A prescribed course for ships or aircraft. 航线航道 "bowling lane/alley"巷, 里弄: dead lane/blind alley: 死胡同 [ taxiing lane = taxiway ]  e.g. Pilot: Roger. Pushback the plane from the Gate of the terminal building 101 to taxiing lane/taxiway. Keep taxiing till the plane reaches the 36 Left runway. Ready for takeoff. |
| veer off the course | deviate from the course |
| expedite | expedite  ['ekspɪdaɪt] sth= To speed up the progress of sth; facilitate sth 加速…的进程；促进; To perform quickly and efficiently: 迅速有效地执行; expediter: 加速完成紧急计划的人; We endeavor to expedite this project. |
| 巡航高度 | 巡航高度: the cruising altitude |

# Lexical Table: Aircraft parts/components

|  |  |
| --- | --- |
|  | n. (飞机的)后翼 aileron /ˈeɪlərɒn/  An aileron is a section **on the back edge of the wing** of an aircraft that can be raised or lowered in order to control the aircraft's movement  [词条图片](javascript:;) [词条图片](javascript:;)  aileron (飞机的**) 后**翼 V.S. flaps（飞机的**) 侧**翼 |
| [ flap ]   1. (飞机的) 侧翼A flap on the wing of an aircraft is an area **along the edge of the wing** that can be raised or lowered to control the movement of the aircraft. ...the sudden slowing as the flaps were lowered.  …副翼降下时的突然减速。 e.g. At this point, you **can retract the flaps (收回/收缩)** of the aircraft. 2. **a bird or insect flaps its wings or if birds’ wings flap**, the wings move quickly up and down. (鸟)快速振动 (翅膀) e.g.   The bird flapped its wings furiously.  那只鸟儿使劲地拍打着翅膀。 3. [V-T](javascript:;)If you **flap sb’s arms**, you move them quickly up and down as if they were the wings of a bird. 像小鸟一样上下扇动着双臂   e.g...a kid running and **flapping her arms**. 一个边跑边**像小鸟一样上下扇动着双臂**的小女孩 |
| 〔飞机, 火车的〕轮子 | **[ undercarriage [‘ʌndə‚kærɪdʒ]  = wheels of a plane or a train]** and the structure that holds them 〔飞机的〕轮胎；〔火车等的〕轮胎  e.g. Upon **touchdown**, the tires rapidly **deflated泄了气 and tore apart,** and all **undercarriages** (the wheels of an aircraft, train) **were worn 磨损into** the **axle['æks(ə)l] [车辆] 轮轴**.  V.S.  chassis /ˈʃæsɪ/  pl: chassis   1. A chassis is the framework that a vehicle is built on; the framework on which the body, engine, wheels etc of a vehicle are built; or that a hardware server is built on (汽车的〕底盘，车架; **[chassis of the car = the frame of the car ]** 2. **A chassis** is the framework that a hardware server is built on (服务器的)[机架](javascript:;) 3. Chassis/ˈʃæsɪ/ : is the landing equipment of a plane 〔**飞机的〕机架，起落架 = chassis = the landing gear** |
| 车轴；[车辆] 轮轴 | **['æks(ə)l] axle  车轴；[车辆] 轮轴 axle**: is the bar connecting two wheels on a car or other vehicle  V.S. axe V.S. axis轴  [词条图片](javascript:;)  e.g. Upon **touchdown**, the tires rapidly **deflated泄了气 and tore apart,** and all **undercarriages (the wheels of an aircraft, train)** **were worn 磨损into** the **axle['æks(ə)l] [车辆] 轮轴**. |
| 门或窗的〕闩，插销 | latch /lætʃ/  1.〔门或窗的〕闩，插销 A latch is a fastening on a door, window, or gate. It consists of a metal bar (the “latch handle 锁柄” ) which you lift in order to open the door; a latch is a small metal or plastic object used to keep a door, gate, or window closed. [to fasten a door, gate, or window with a latch  **[ 用碰(簧)锁锁上；用插销插上: latch the door; latch the gate; 拉起门闩(把门/窗打开): lift the latch; 锁柄: the latch handle ]**  e.g . Gwen **lifted the latch** and opened the gate. 格温拉起门闩，把门打开. e.g. You **left the latch off** the gate and the dog escaped.   你没插门闩，狗跑了。  [词条图片](javascript:;) => latch handle  e.g. To open the **overwing emergency exit door**位于机翼边上的紧急出口 (next the “exit row” **紧急逃生口)**, please follow these steps: Note that the **overwing emergency exit door**位于机翼边上的紧急出口 opens inward. It is on the right side of the passenger cabin and can be unlatched (拉开门/窗的插栓) from the inside or from the outside. Support the exit door at the lower hand grip and the upper latch handle. Pull the upper latch handle marked EXIT PULL. Tilt the upper section of the exit door inboard and lift the door out of the bottom hook and pin fittings.  2. [N-COUNT](javascript:;)A latch is a lock on a door which locks automatically when you shut the door, so that you need a key in order to open it from the outside; a type of lock for a door that you can open from the inside by turning a handle, but that you need a key to open from the outside 弹簧锁 **[ on the latch (=shut but not locked)合上〔插了门闩但没有锁上〕; leave the door on the latch: 把门合上门闩但没锁; leave the window on the latch: 把窗合上但没锁 ]**  e.g. Tracy went out, leaving the door on the latch. 出去了，把门合上但没锁。  3. [ phrasal verb ] **latch onto sb/sth**   * [ latch onto sth] to become very interested in something 对某人/某事**深感兴趣**  e.g. Don’t just **latch onto** the latest fashion chic. 不要只顾着追逐最新出现的时髦管理理念。 * [ latch onto sb.] to follow someone and keep trying to talk to them, get their attention etc, especially when they would prefer to be left alone **缠住某人不放**  e.g. He **latched onto** Sandy at the party and wouldn’t go away. 在派对上他缠住桑迪不放。 * [ latch onto sth ] to hold tightly to something with your hand, mouth etc 紧抓；紧咬   e.g The baby **is latching on** to its mother’s breast 紧紧咬住母亲乳头的婴儿  e.g. That terrible alligator短吻鳄 is **latching onto** Jack’s leg tightly. |
| (震荡吸收器)=> 减震器，缓冲装置 | * [ shock absorber [əb'zɔːb] * e.g. The wheels are equipped with **shock absorbers**[əb'zɔːb]**减震器，缓冲装置.** Most modern aircraft have **tricycle undercarriages (wheels of a plane or a train)**, where there are two main wheels (or **wheel assemblies**) under the wings and a smaller wheel (or **wheel assembly**) under the **nose**.   **//tricycle三轮车** |
| [机] 气弹簧，气压弹簧 | gas spring  [机] 气弹簧，气压弹簧 V.S. the traditional mechanical spring传统的机械弹簧  [词条图片](javascript:;)     1. Also available is the LJ500 nitrogen **gas sprin**g from DADCO (Plymouth, MI). DADCO公司也有LJ500氮气弹簧。 2. Gas spring 气弹簧 is the majority of the machinery manufacturers are adopted with advanced production technology and excellent performance, the traditional mechanical spring传统的机械弹簧 will be incomparable.   e.g. To open the **upward opening passenger/crew entrance door,** follow these steps: **Press** the external handle trigger marked 'PUSH' to allow the door handle to **spring out(弹出来**). **Turn** the external handle **counterclockwise**. Lightly **pull on** the external handle to initiate **gas spring([机] 气弹簧**) operation to open door. |
|  | piston ['pɪst(ə)n] (引擎里的) 活塞 piston is **a part of an engine** consisting of a short solid piece of metal inside a tube, which moves up and down to make the other **parts of the engine** move. |
| [动力] 涡轮(引擎)；[动力] 涡轮(引擎)机, **turbine['tɜːbaɪn; -ɪn] is an engine or motor** in which the pressure of a liquid, wind, or gas moves a special wheel around.  [[steam turbine](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=steam%20turbine&lang=en)蒸汽涡轮; [gas turbine](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=gas%20turbine&lang=en)燃气涡轮; [wind turbine](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=wind%20turbine&lang=en)风力涡轮机 ]  [词条图片](javascript:;)  e.g. **Retractable可收起的landing gear systems** may be operated either **hydraulically液压** or electrically, or may **employ** a combination of the two systems. An electrical **landing gear** retraction**缩回/收起** system utilizes an electrically driven **turbine[动力] 涡轮** for gear operation. Normally, the landing gear should be **retracted**缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring **an aborted takeoff弃飞**, the airplane could no longer be landed on the runway. |
| dashboard | The first office assists the pilot to monitor instruments and gauges in the dashboard. |
| the belly of the plane |  |
| Overhead compartment  机舱内头顶的储藏隔间 | [ 机舱内头顶的储藏隔间: overhead compartments; overhead bins ]  V.S.  **glove compartment/glove box** (a small cupboard in front of passengers, next to the dashboard of a vehicle)  e.g. **Stow [stəʊ]** your **carry-on luggage** on the overhead bins/overhead compartment/overhead cupboard  e.g. Please put your luggage under your seat or the **overhead compartments**小隔间 |
| windshield | A framed pane of usually curved glass or other transparent shielding located in front of the occupants of a vehicle to protect them from the wind.挡风玻璃  e.g. The company has also tested modified versions of its IceController to **de-ice car windshields/windscreen and airplane wings**.  以将其应用于汽车风挡玻璃和飞机机翼的除冰工作。 |
| V1 speed | the most critical speed, used as the benchmark.Only when a plane reaches that speed, it can take off. |
| pedal v.s petal[植]花瓣 | A similar foot-operated part attached to a crank and used for powering various devices, such as a bicycle.踏板：附在曲柄上用于发动如自行车等各种装置的类似用脚操纵的部件; eg press the pedal. Eg **the brake pedal 刹车踏板** |
| paddle | 桨 A wooden implement having a blade at one end or sometimes at both ends, used without an oarlock to propel a canoe or small boat. //row the boat; the rower: sb who rows the boat |
| tarmac; apron, ramp | 停机坪, A tarmacadam road or surface, especially an airport runway; eg The runway is cleared. The plane is gliding/taxing滑行 on the runway/apron, then rotates抬轮, and then take off. Eg clear the runway and the plane is taking off.  e.g. 'A lot of confusion': Images shared on **social media (“interation, e.g. weichat, FB, twitter)** showed passengers waiting in darkness because of the **paralyzed power system瘫痪的电力系统.** Some reported being stuck on board aircraft for six hours. Another passenger was **stranded** on the **tarmac/apron** on a Delta flight from Sacramento, California.  //tax v.s. tariff (a tariff is a tax that a government collects on goods coming into a country. (政府对进口货物征收的) 关税) |
| propeller； a propeller plane | an eletrical machine for propelling or pushing an aircraft or a boat forward or onward, consisting of a power-driven shaft轴，杆状物 with radiating blades that are placed so as to push air or water in a desired direction when spinning (汽船、飞机的)螺旋桨, 推进器; propeller-blade 螺旋桨叶; propeller-driven 螺旋浆带动的; airplane propeller 飞机螺旋桨; a propeller plane: 带螺旋桨的飞机; eg the throttle and propeller: 油门&螺旋桨 [spin: 旋转,纺纱; swirl:漩涡, 打漩盘绕 the plane crashed into the ocean swirl; hover:盘旋 the eagle is hovering in sky] |
| helix | * ['hiːlɪks] helix Mathematics A three-dimensional curve that lies on a cylinder or cone, so that its angle to a plane perpendicular to the axis is constant. 【数学】 螺旋线; A **spiral** form or structure. 螺旋形状或结构 eg The DNA is of spiral structure,like s helix. |
| anatomy: The folded rim of skin and cartilage around most of the outer ear. 【解剖学】 耳轮 |
| porthole | **aeronautical**: A small, usually circular window in a ship's or plane's side. 【航海】 舷窗：位于船的一侧的小的，通常为圆形的窗口 |
| throttle | 油门 eg throtlle and propeller 油门和螺旋桨;  **throttle up: 加大油门**  //press the **throttle** = press the **pedal** |
| thrust | 推力;猛推 To push or drive quickly and forcibly |
| gauge | A standard dimension, quantity, or capacity. 尺度，标准：标准的体积、数量或容积 An instrument for measuring or testing.测量仪器：测量或检验用的仪器 |
|  | （机尾的）方向舵rudder: is a structure **at the tail of an aircraft**, used for effecting **horizontal changes in course, from left to right, the side way**; pls check the rudders  V.S. elevator: usually attached to the horizontal **stabilizer of an aircraft**, that is used to produce **motion up or down. 升降舵** |
| fin   1. one of the thin body parts at the tail of the fish, which the fish uses to swim 鱼鳍 2. **part of a plane that sticks up at the back/tail and helps it to fly smoothly 〔飞机的〕垂直尾翼** 3. a thin piece of metal that sticks out from a car or bomb at the back 〔汽车、炸弹的〕鳍状稳定板 |
| elevator | A movable control surface, usually attached to the horizontal **stabilizer of an aircraft**水平稳定器, that is used to produce **motion up or down. 升降舵**，用来操纵飞机升降  V.S. rudder: a structure **at the tail of an aircraft**, used for effecting **horizontal changes in course, from left to right, the side way** |
| stabilizer of an aircraft | The horizontal **stabilizer** and elevator in the tail assembly of an aircraft.  飞机尾部的水平稳定器和升降舵 |
| aisle seat | 走廊 座位 aisle seat V.S. 窗口的座位 window seat V.S. 紧急出口的座位 exit row seat |
| jump seat | (汽车上的)弹跳座椅 |
| the oxygen mask | put on your mask firstly and the flight attendants (FA) will try to **extinguish the fire 灭火** |
| 飞机上飞行途中的 (http://edition.cnn.com/2016/08/18/aviation/inflightfeed-airline-food/index.html) | In-flight services are ones that are provided on board an aeroplane.  **[ 飞机餐 in-flight food； in-flight meal; in-flight services = FA's service = fight attendants']**  E.g. ...an inflight magazine. ...飞机上飞行途中提供的杂志 e.g Loukas tells CNN about the incident that piqued his interest in in-flight food. "It just stuck. I love learning all about how the food is selected for passengers to eat, how it's delivered to aircraft and everything in between. "It's quite a logistics-driven industry, and if passengers only knew half the things that airlines go through in order to get a meal to them in-flight to eat, they would be astounded." "Whilst you can't always rely on Turkish Airlines' in-flight service, its meals are always on point, delicious and there's plenty of it, even on short flights," says Loukas. "Its caterer Do & Co is renowned to create some of the best in-flight dishes飞机餐 i in the world." //caterer ['ketərɚ]: (为办公、婚礼、派对等的) 餐饮供应者; 酒席承办者; the catering colleage 烹饪学校 |
| fuselage | fuselage ['fjuːzəlɑːʒ] The central body of an aircraft, to which the wings and tail assembly are attached and which accommodates the crew, passengers, and cargo. 机身 V.S. **hull** (main body of a ship)船体; the nut hull （果实的）外壳 |
| extinguisher | **extinguish a fire= to put out a fire ; fire-extinguisher;**  eg Was the fire extinguished? |
| **To put an end to (hopes, for example) 熄灭（如希望等） eg extinguish one's faith in future 使某人对未来的信念破灭 eg My hope is extinguished finally** |
| **extinguish sb: to obscure; eclipse. 使黯然失色；使相形见绌 eg She was extinguished by her sister. 她的妹妹使她相形见绌** |
|  |
| siren | siren: A device in which compressed air or steam is driven against a rotating perforated disk to create a loud, often wailing sound as a signal or warning. 汽笛：一种装置，其中被压空气或蒸汽冲击一个旋转的有孔圆盘而产生巨大的、常常是尖锐的声音，作为信号或警报; An electronic device producing a similar sound as a signal or warning: 警报器 |
| mock up | simulator 模拟 |
| the emergency slide | 紧急滑梯 emergency slide = exit slide  Normally, one plane is equipped with two "emergency slides / exit slides". **"Jump and slide"** is the correct safe action on the emergency slide.  E.g. The right-side engine of an American Airlines Boeing 767 failed Friday during an attempted takeoff, sending passengers hurriedly jumping down **emergency slides/exit slides** onto a runway at Chicago's O'Hare International Airport. The 161 **terrified/petrified/frightened 惊呆的** passengers and nine crew members scrambled使混杂 to safety after huge **plumes of flames** erupted on the right side of the **turbine** (engine). About 20 people were taken to the hospital without **life-threatening situation**, but with minor injuries that occurred during the evacuation down the **emergency slides/exit slides**. The fire is successfully **contained控制火情**. |
| Hydraulic;  hydraulically | Of, involving, moved by, or operated by a fluid, especially water, under pressure. 水力的，水压的：压力下的液体（尤指的水）的、涉及到液体的、靠液体移动或操作的  e.g. **Retractable可收起的landing gear systems** may be operated either **hydraulically液压** or electrically, or may **employ** a combination of the two systems. An electrical **landing gear** retraction**缩回/收起** system utilizes an electrically driven **turbine[动力] 涡轮** for gear operation. Normally, the landing gear should be **retracted**缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring **an aborted takeoff弃飞**, the airplane could no longer be landed on the runway.  e.g. U.S. airplane 1549 was struck by Canadian **geese** accidentally just 10mins after takeoff (still climbing to the **cruising altitude巡航告诉**). Then the **hydraulic failure液压失灵** caused the engine **going into a stall.** Luckily, the captain Sally, the **pilot-in-command责任机长**, decided to **ditch on the Hudson river  [‘hʌdsən] 水上迫** //(飞机/汽车引擎的) 停止运转，熄火  **[ go into a stall ]** if a plane or car **goes into a stall**, its engine stops working.  e.g. Many types of aircraft use **‘retractable’ landing gear**, which **retracts into** the fuselage of the aircraft during flight to decrease drag on the aircraft. **Retractable landing gear** often makes use of **hydraulics**, while emergency mechanical means are still available in the event of **hydraulic failure**. |
| survivable | Capable of surviving: 能够生存的： survivable organisms in a hostile environment.在险恶环境中能够生存的生物体 That can be survived:非致命的： a survivable, but very serious, illness. 一场非致命但很严重的病 |
| pinger | **pinger=beacon:** a device used underwater to produce pulses of sound, as for an echo sounder.声脉冲发送器：置于水下产生声脉冲的装置; the flight data recorder is equipped with a pinger/beacon |
| [航] 起落架；起落装置 | [航] 起落架；起落装置，着陆装置 landing gear  V.S. Chassis/ˈʃæsɪ/ : is the landing equipment of a plane 〔**飞机的〕机架，起落架 = chassis = the landing gear**  [词条图片](javascript:;)  e.g. **Retractable可收起的landing gear systems** may be operated either **hydraulically液压** or electrically, or may **employ** a combination of the two systems. An electrical **landing gear** retraction**缩回/收起** system utilizes an electrically driven **turbine[动力] 涡轮** for gear operation. Normally, the landing gear should be **retracted**缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring **an aborted takeoff弃飞**, the airplane could no longer be landed on the runway.  e.g. Many types of aircraft use **‘retractable’ landing gear**, which **retracts** into the **fuselage** of the aircraft during flight to decrease drag on the aircraft. **Retractable landing gear** often makes use of **hydraulics**, while emergency mechanical means are still available in the event of hydraulic failure. |
| taxiing | \* 滑行 tax**ii**ng = gliding;taxi way  Taxi => The plane is tax**ii**ng on the runway (taxiway)  e.g. The plane is tax**ii**ng along the “taxiway” until reaching the “A runway” and will take off as soon as the speech reached V1.  e.g. The plane is normally gliding on the taxiway for few mins after landing.   |  | | --- | | * **pushback** the plane from the **Gate of the terminal building** to the “**taxiway/taxiing lane**” => stop till it **is taxiing to the correct “runway**” => on the **runway**, speed up till V1 to take off. * When the plane is to land, the reversed order: plane lands on the “**runway**” => gliding on the runway till the “**taxiway/taxiing lane** => then **it’s taxiing to the Gate of the terminal buildin**g. |   \* 累赘的繁重的: taxing = burdensome |
| on the roll | 滑行; eg The plan is **on the roll (taxiing/gliding)** on the runway and going to take off. |
| nose of the plane | Ascend the nose of the plane. Eg Bring the nose up! Eg Put ehe nose down! **[nosegay of flowers; nasal]**  e.g. Pilot: I can go to San Jose or some other destination if it calls for that. Does San Jose **have crash, fire and rescue capability**? I want to know what the winds are as well down there. If I've got high **crosswinds** with **a cocked nose竖起的鼻子**in the landing gear, I'm not very interested in going down there.  e.g. InterStar Airways Flight 293, landed at San Francisco International Airport (SFO), San Francisco, California, with **the nose wheels cocked** at 90 degrees, which **is upwards perpendicular to** the ground. //be perpendicular to sth: exactly vertical |
| cockpit | 驾驶员座舱 |
| lubrication | lubricating oil = lubrication = grease(油脂；贿赂) 润滑油; |
| screw and nut |  |
| swirl; swirling | 旋涡; 涡流 |
| gear down | lower the speed 使换慢档, 减速 |
| gear up |  |
| nautical miles | 海里（合1.852公里） |
| knots | (绳等的)结 the chinese knot; 节(船速,＝哩／小时) eg 70 knots |
| altimeter | altitude -> altimeter; An instrument for determining elevation or altitude, especially an aneroid barometer used in aircraft that senses pressure changes accompanying changes in altitude. 测高仪，高度计  **18, 000 feet: one eight zero feet**  **20, 000 feet: two zero zero feet** |
|  | |  |  | | --- | --- | | 温度计；体温计 | [θə'mɒmɪtə] thermo**meter:** a piece of equipment that measures the temperature of the air, of your body etc | | (汽车的）里程表，里程计 | [**əu'**dɔmitə] ,oˋdɑmətɚ/ odometer: an instrument in the **dashboard(机动车辆的) 仪表板**of a vehicle that shows **how many miles or kilometres** the vehicle has travelled. | | 〔车辆上的〕速度计 | 〔车辆上的〕速度计 [spiː'**dɒmɪtə**] speedometer: an instrument in the **dashboard((机动车辆的) 仪表板)** of a vehicle that shows **how fast** it is going, like, miles/hr. | | n. 测高仪，高度计 | altitude 高度=> ['æltɪmiːtə] altimeter: an instrument in an aircraft that tells you how high you are〔飞行器中的〕高度计[表]  **18, 000 feet: one eight zero feet**  **20, 000 feet: two zero zero feet** | | meterogology [气象] 气压计；**睛雨表； 显示变化的事物** | (meterogology) [bə'**rɒ**mɪtə] barometer  1.an instrument that measures changes in the air pressure and the weather, or that calculates height above sea level 气压计，晴雨表  2. (figurative meaning) barometer is something that shows any changes that are happening in a particular situation. **If something is [ a barometer of ]a particular situation,** it indicates how things are changing or how things are likely to develop. **〔 a barometer of sth 反映事物变化的〕晴雨表，〔反映事物变化的〕标志**  e.g. In past presidential elections, Missouri has been **a barometer of** the rest of the country.  在过去的总统大选中，密苏里州一直是该国其余各州 的晴雨表 e.g. The skin is **an accurate barometer of** emotional and physical health. 皮肤是反映一个人身心健康状况的 准确指标。 | | 雨量计 | [ rain gauge / pluviometer) ] N an instrument for measuring rainfall or snowfall, consisting of a cylinder covered by a funnel-like lid 雨量计 (Also called pluviometer)  e.g. After checking the rain gauge/pluviometer雨量计, a new daily rainfall record was set unprecedentedly high at the NWS Office of 16.08" beating yesterday's record of 14.40" | |
| toggle | A pin, rod, or crosspiece fitted or inserted into a loop in a rope, chain, or strap to prevent slipping, to tighten, or to hold an attached object. 一种装入或插入绳子，链子或带子，在上面绕成一个环的钉子、杆或横档用于防止滑动或固定一个连接的物体 eg Pull the inflation toggles to inflate your life jacket/vest 充气. |
| To alternate between two or more circuit configurations, usually by the operation of a single switch: 在两个或两个以上的电路装置间转换，通常是通过一个单独的开关 |
| Doors in an aircraft | There are two types doors that you will need to know how to open. They are the:   * **upward opening passenger/crew entrance door => the entrance door** * **(inward) the overwing emergency exit door**位于机翼边上的紧急出口 **=> emergency exit door, near the “exit row紧急逃生口”**   ## To open the **upward opening passenger/crew entrance door,** follow these steps:   **Press** the external handle trigger marked 'PUSH' to allow the door handle to **spring out(弹出来**). **Turn** the external handle **counterclockwise**. Lightly **pull on** the external handle to initiate **gas spring([机] 气弹簧**) operation to open door.   ## To open the **overwing emergency exit door**位于机翼边上的紧急出口 **(next to the “exit row” 紧急逃生口),** please follow these steps:   Note: T**he overwing emergency exit door** opens **inward**. It is on the right side of the passenger cabin and can be **unlatched(拉开（门等的）插栓)** from the inside or from the outside.   Support the exit door at the lower hand grip and the upper **latch handle锁柄**. Pull the upper **latch handle** marked EXIT PULL. Tilt the upper section of the exit door inboard and **lift the door** out of the bottom hook and pin fittings.   WARNING: The **overwing emergency exit door**位于机翼边上的紧急出口 **(near the “exit row” 紧急逃生口)** weighs approximately 28 pounds. Be careful when you open the door, since the door is not supported by the aircraft when opened. |
| 位于机翼的 overwing | **[ the overwing emergency exit door** 位于机翼边上的紧急出口 **]** |
| 紧急逃生口 | Exit Row 紧急逃生口 => exit row seat:  e.g. If you are sitting in an exit row, make sure you are familiar with how to open the emergency **exit door** and be ready to assist other passengers when deplaning in an emergency.  e.g. There are two types doors that you will need to know how to open. They are the:   * upward opening passenger/crew entrance door => the entrance door * (inward) the **overwing** emergency exit door位于机翼边上的紧急出口 => emergency exit door, near the “**exit row紧急逃生口**”   //ref: See “Aviation I” => |
| 航空路线图/地图 | aeronautical chart 航空路线图/地图 |
| [动力] 燃油泵 | [动力] 燃油泵 fuel pump   |  | | --- | | Post-flight checklist:   1. 1cool down your **engine** for approximately one minute before turning it off. 2. At this point, you can **retract the flaps** 收回/缩回侧翼of the aircraft. 3. Then you need to turn off the **electric fuel pump燃油泵**. 4. Then cut off the **mixture idle cut-off** .  5. The last thing you do is turn of the **master switch** that controls all electronic devices. 6. Fill out the **logbook航空日志** for this flight. 7. Record the **Hobb’s meter**, which tells mechanics how much time the aircraft has been in operation.  8. After that, you just need to park the aircraft in the **hangar飞机库** . | |
|  | **[ the master switch]**  that controls all electronic devices.   |  | | --- | | Post-flight checklist:   1. 1.cool down your **engine** for approximately one minute before turning it off. 2. At this point, you can **retract the flaps** 收回/缩回侧翼of the aircraft. 3. Then you need to turn off the **electric fuel pump燃油泵**. 4. Then cut off the **mixture idle cut-off** .  5. The last thing you do is turn of the **master switch** that controls all electronic devices. 6. Fill out the **logbook航空日志** for this flight. 7. Record the **Hobb’s meter**, which tells mechanics how much time the aircraft has been in operation.  8. After that, you just need to park the aircraft in the **hangar飞机库** . | |
|  | **mixture idle cut-off**   |  | | --- | | Post-flight checklist:  1. cool down your **engine** for approximately one minute before turning it off. 2. At this point, you can **retract the flaps** 收回/缩回侧翼of the aircraft. 3. Then you need to turn off the **electric fuel pump燃油泵**. 4. Then cut off the **mixture idle cut-off** .  5. The last thing you do is turn of the **master switch** that controls all electronic devices. 6. Fill out the **logbook航空日志** for this flight. 7. Record the **Hobb’s meter**, which tells mechanics how much time the aircraft has been in operation.  8. After that, you just need to park the aircraft in the **hangar飞机库** . | |
| 机头 | [ nose of a plane ] => nosedive/plunge/slump  e.g. The wheels are equipped with **shock absorbers**[əb'zɔːb]**减震器，缓冲装置.** Most modern aircraft have **tricycle undercarriages (wheels of a plane or a train)**, where there are two main wheels (or **wheel assemblies**) under the wings and a smaller wheel (or **wheel assembly**) under the **nose**.  e.g. InterStar Airways Flight 293, landed at San Francisco International Airport (SFO) with the nose wheels **cocked**机头**朝上竖起** at 90 degrees, which **is upwards perpendicular to** the ground.  e.g. Pilot: I can go to San Jose or some other destination if it calls for that. Does San Jose **have crash, fire and rescue capability**? I want to know what the winds are as well down there. If I've got high **crosswinds** with **a cocked nose朝上竖起的机头**in the landing gear, I'm not very interested in going down there.  **//tricycle三轮车** |
| (震荡吸收器)减震器，缓冲装置 | e.g. The wheels are equipped with **shock absorbers**[əb'zɔːb]**减震器，缓冲装置.** Most modern aircraft have **tricycle undercarriages (wheels of a plane or a train)**, where there are two main wheels (or **wheel assemblies**) under the wings and a smaller wheel (or **wheel assembly**) under the **nose**.  **//tricycle三轮车** |
|  | [flæn(d)ʒ] flange: [机] 凸缘；轮缘；边缘 vt. 给…装凸缘 flange: the flat edge that stands out from an object such as a railway wheel, to keep it in the right position or strengthen it  [词条图片](javascript:;) |

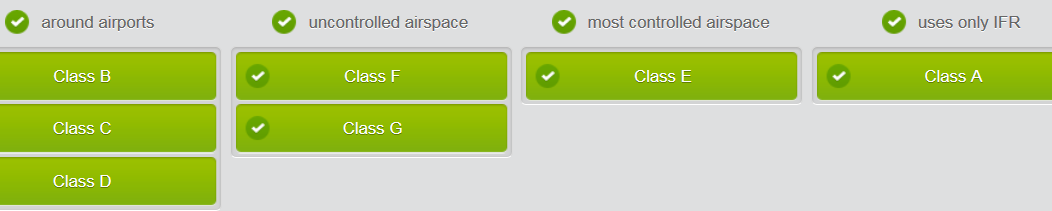
# Lexical Table: Airspace classification 领空分级

Airspace/territorial air领空 is further divided into classes that range from A to G. The **airspace classification领空分级** is determined by looking at **aero’nautical charts航空地图**.

Each **class of airspace/territorial air** has specific rules for flying.  Generally, above an airport or an urban area, stricter rules apply to low-flying aircraft, but as the altitude increases, the rules become less strict or even a little **lenient**.  Specifically, each different **class of airspace/territorial air** has rules for whether aircraft should be flown **Instrument Flight Rules (IFR)** or **Visual Flight Rules (VFR)**.

* Class A, for example, aircraft **MUST** fly using IFR.  Since class A is so high (from 18,000 to 60,000 MSL, **ONLY IFR** can be used to navigate aircraft in this area.
* In all other **classes of airspace/territorial air**, aircraft can fly using either IFR or VFR.
* Class B airspace is located **around major airports**.
* Class C airspace is located **around** **airports with moderate activity.**
* Class D airspace is located **around** **airports with light activity.**
* Most all other **controlled airspace** is labeled as Class E.
* Class F airspace is not used in the United States, but in Germany, for example, Class F airspace is used for **IFR** flight in **uncontrolled space** (an area where **air traffic control** is considered unnecessary for the control of aircraft).
* Class G Airspace indicates **uncontrolled airspace**, or **the portion of airspace closest to the ground**.

Pilots should check the specific **airspace classifications** of each country they will visit since the details of **airspace classification** differ from country to country.



# Lexical Table: Aircraft emergencies

Aircraft emergencies includes in aviation can be put into **three categories: mechanical incidents, human error, and natural disaster.**

* “mayday, mayday”: an internationally recognized **distress signal** used in radiote’lephony 无线电话学 **for life-threatening emergencies**
* “pan-pan call” = a **distress call** for urgent situations that are **NOT life-threatening**
* distress call
* Brace, brace! **“Brace for impact”**
* Eg "**Brace for impact 碰击撞击",** announced by pilot when the plane is ditching on the water作水上迫降。

|  |  |  |
| --- | --- | --- |
| **Types of air emergencies** | **word** | **definition** |
| Mechanical incidents | **Mechanical incidents** include emergencies involving **technical or mechanical failure**, such as problems with the engine, turbine, hydraulic system, propeller, flaps, or the landing gear. | |
| **runway incursion**  **跑道入侵** | a situation involving the incorrect presence of an aircraft vehicle or person in the area that is designated for the landing and take off of an aircraft. |
| navigation error | a mistake made in directing or planning the course of an aircraft |
| fuel shortage | a situation where the aircraft does not have enough fuel |
| **Cabin depressurization**  **机舱失压** | In the unlikely event of **cabin depressurization /di:,preʃərai'zeiʃən; -ri'z-/,** an oxygen mask will fall from the **overhead compartment.**  //depressurization: 使(飞机或宇宙飞船的增压舱)降压，使减压; 失去气压 |
| 引擎熄火告警 | **[the stall warning 引擎熄火/失速告警**] a waring sent by airplane when plane is flying so low that it is very close to the land, ocean, water, or mountain. A condition in which an aircraft experiences an interruption of airflow resulting in loss of lift and a tendency to drop. 失速 //**引擎熄火 flame out = go into a stall** |
| mechanical failure | when the engine or another mechanical device on the airplane fails |
| Human errors | Emergencies involving human errors include **near misses, close calls**, fires, bombs, hijacks, and onboard **medical emergencies, like heart attack, heart arrest**.  // (车辆、飞机等的)侥幸免撞, 侥幸脱险；死里逃生near misses = close calls | |
| medical emergency | a serious injury or illness that puts a person’s life or health at risk |
|  | Another human error, like, a snowplough/snowplow is left on the runway after a storm.  // snowplough= snowplow['sno,plaʊ]: A snowplough is a vehicle which is used to push snow off roads or railway tracks. 扫雪机 |
| bomb | an explosive device that is planned to detonate under specific conditions |
| **Natural disaster** | **In-flight emergencies due to natural disasters include events such as bird strikes, turbulence, atmospheric icing大气结冰, wind shear风切变, 乱流, and microburst旋气流** | |
| **windshear;**  **microburst** | a sudden change of wind velocity and/or direction |
| Birdstrike | a collision between an airborne animal and a man-made vehicle, especially an aircraft.  The most famous air emergency caused by birdstrike is the U.S. airline 1549 **ditched on the Hudson river** by captain Sally. |
| turbulence; turbulent | An eddying motion of the atmosphere that interrupts the flow of wind. 湍流：打断风的运动的极不规则的大气运动 |

# Lexical Table: Onboard air emergency items

|  |  |
| --- | --- |
|  | 紧急滑梯 emergency slide = exit slide; Normally, one plane is equipped with two "emergency slides / exit slides". **"Jump and slide"** is the correct safe action on the emergency slide/exit slide.  When using **the exit slide**, jump feet first into the center of the slide and then slide through it.  E.g. The right-side engine of an American Airlines Boeing 767 failed Friday during an attempted takeoff, sending passengers hurriedly jumping down **emergency slides/exit slides** onto a runway at Chicago's O'Hare International Airport. The 161 **terrified/petrified/frightened 惊呆的** passengers and nine crew members scrambled使混杂 to safety after huge **plumes of flames** erupted on the right side of the **turbine** (engine). About 20 people were taken to the hospital without **life-threatening situation**, but with minor injuries that occurred during the evacuation down the **emergency slides/exit slides**. The fire is successfully **contained控制火情**. |
|  |  |
|  | 像救生衣/救生筏的漂浮设备floatation device**: a personal flotation device (abbreviated as PFD**; also referred to as a life jacket/life vest, life preserver, life saver, cork jacket, buoyancy aid or flotation suit) is piece of equipment designed to be **inflated充气** to assist a wearer, who may be either conscious or unconscious, to **keep afloat.** PFDs are available in different sizes to accommodate variances in body weight. Designs differ depending on wearing convenience and level of protection.  Put the **flotation device** on, tighten the strings, and **inflate it by blowing into the tube**.   * **life preserver:** A life preserver is something such as a life jacket/life vest, life belt/life ring/life buoy求生圈, which helps you to float when you have fallen into deep water. 救生用具 * Life jacket/ life vest [ Do not **inflate** the life jacket/life vest until you’re afloat above the sea surface; Otherwise you would might be **suffocated/smothered窒息** by water]  eg Do not **inflate充气 your life vest/jacket** before you go out of the plane; after you left the plane, pull out the **inflation toggles** to inflate your life vest. * **life buoy**  */bɔɪ*,buɪ*/*: a large ring made out of material that floats, which you throw to someone who has fallen in the water, to prevent them from drowning   (life buoy) (life belt) (ring)   * **life belt = life buoy** :　a special belt you wear in the water to prevent you from sinking　〔绑在腰间防止在水中下沉的〕救生带 * **life ring** * **life saver: 救生员** * **cork jacket; cork vest: 软木救生衣 // [kɔːk] n. 软木塞；软木** * **buoyancy aid [ˈbɔɪənsi]**: the ability of an object to float 〔物体在液体里的〕浮性; the power of a liquid to make an object float 〔液体的〕浮力   e.g. Salt water has more **buoyancy** than fresh water. 盐水的**浮力**比淡水大   * **floatation suit:** 浮动泳装, help beginning and advancing young swimmers. * **Life raft**救生艇/筏, 橡皮船 a flat-bottomed **inflatable** craft for floating or drifting on water: eg Do not **inflate充气 your life vest/jacket** before you go out of the plane; after you left the plane, pull out the inflation toggles to inflate your life vest. |
|  | In the unlikely event of **cabin depressurization /di:,preʃərai'zeiʃən; -ri'z-/,** an oxygen mask will fall from the **overhead compartment.** Place the mask over your mouth and nose and breathe normally.  //depressurization: 使(飞机或宇宙飞船的增压舱)降压，使减压; 失去气压 |
|  | No hazardous materials on board  e.g. Obey **carry-on restrictions** and remember that **no hazardous materials** are allowed on this flight. |
|  | buckle your seatbelt  e.g. **Buckle your seatbelt** by inserting one end of the **seatbelt** into the **latch** and tightening the belt.  // buckle V) 变弯曲; 把(button, belt)扣起来 n. 皮带扣; (皮带等的) 带扣  e.g. There are two buckles at the front of my briefcase, see the gold-plated ones.  e.g. Buckles these buttons on your suitcase.  e.g. It's so hot in the West that **the scorching灼热的** heat is **breaking/shattering records**, causing massive power outages and prompting flight cancellations. **It was such a scorcher酷热的天/大热天!** Because of the **record-breaking/shattering** temperature, the heat could've been a factor as four lanes of Highway began to **buckle变弯曲** on Sunday. Drivers reported the giant **cracks/fissures/rifts [木] 裂缝；裂** forming on the road and the lanes were repaired. Las Vegas was also scorching**灼热的** and tied an all-time/unprecedented **史无前例的** record high at 117 degrees Fahrenheit on Tuesday. |
| Check-in luggage托运行李  V.S.  Carry-on luggage 随身的非托运行李 | [ stow your **carry-on luggage** on the **overhead bins/overhead compartment/overhead cupboard** ]  // 把 xxx 先收起来(然后等用的时候再拿出来 **stow** /stəʊ/ (stowed, stowed) If you stow something somewhere, like **chest of drawers, cupboard, wardrobe['wɔːdrəʊb]**], you carefully put it there until it is needed. |
| emergency exit door | If you are sitting in an **exit row**紧急逃生口, make sure you are familiar with how to open the **emergency exit door** and be ready to assist other passengers when deplaning in an emergency.  //ref: See “Aviation I” => |

# \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# \*\*Aviation I \*\*

# Part 1) Airline industry personnel: roles and duties

See “Table: Airline industry personnel (roles and duties)” in Lexical resources.

## mp3)

# Part 2) Discuss air industry

## mp3), 3rd row

Listen to the statements made by aviation industry personnel about where they work.



## mp3), 4th row



Discussing airline industry careers. You are at a career fair with your friends. A major airline company is recruiting, and a number of their personnel are talking about their jobs. Listen to each speaker and decide whether you are interested in that job as a career.

# Part 3) Describing an airport and runway

**See the “Lexical Table: airport facilities and locations in an airfield”**

1. At the Haversfield Airport, the runways are laid out in a grid from north to south and from east to west in the direction of the prevailing winds, which mostly blow from north to south in Haversfield, but can sometimes change direction suddenly and blow from east to west.  
  
2. M.L. Loi designed the new airport terminal so that it would sit in the middle of the two north-south parallel runways.  
  
3. The concourse area of the new terminal building has large windows on either side of it, which makes the view quite accessible to all passengers, even if they are walking down the center aisle to their departure gates.  
  
4. The East/West parallel runways, which intersect the North/South runways at the far end of the airfield, are only visible from the end of the main terminal at Gates 50 to 55.  
  
5. M.L. Loi designed this area with a special outdoor viewing facility so that in good weather passengers can go upstairs on the roof to get a better view of the air traffic.  
  
6. In the distance, observers can see the many hangars at the edge of the airfield, as well as the meteorological facilities, and the big orange windsock.  
  
7. behind the viewing platform, the top of the new terminal can be seen, and beyond that the new parking structure for the arriving and departing passengers.

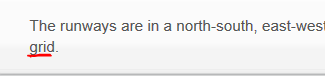
## mp3) 2nd row



## mp3) 3rd row) Runway conditions



## Runway conditions



The **windsock** indicates that 

|  |
| --- |
| Current Conditions at the Stansville Airfield  Request: You have a sudden change of runway conditions due to a snowstorm, with ice, **slush雪泥**, and **drifting snow飘雪；吹雪**. You must communicate this to the captain of the airplane coming in to land.  The conditions at the Stansville Airfield have deteriorated in the bad weather this afternoon. Normally planes land on the East/West runways, but today **the prevailing winds** have changed due to the storm. Planes should **land on Runway** 36 and **taxi to the airport terminal**. All departing flights have been cancelled or delayed due to the **inclement treacherous weather狂风暴雨的危险的(天气)**, so the only aircraft activity is the airplanes currently still in the air that are trying to land.   * //snowplow ['sno,plaʊ]   The temperatures dropped suddenly after 2 p.m., and so the rain turned to **sleet雨加雪** and then to snow.  The **snowplows** have been working nonstop to keep the runways clear of ice and snow, but the temperatures have continued to fall and the poor visibility and high winds are making it hard for even the **snowplows** to keep the runways clear. The air traffic controllers are making contact with each aircraft in the **vicinity** to determine the **feasibility/viability** of landing at an airport farther south of Stansville, where the weather isn’t quite so bad and the visibility is better.  Wind 040 at 22 **gusting** to 28. The **blowing winds** are causing drifting snow to pile up on **taxiways**, so planes that have landed are having a hard time tax***ii***ng through the slippery surfaces or **slush雪泥**  to get to the **ramps** to **deplane/disemplane the passengers**.  The weather forecasters have reported that this early winter storm should pass over the Stansville area in the next few hours, and that by morning the conditions will have improved enough for air traffic to continue. So the cancelled flights will be able to resume activity by tomorrow morning, provided the runways can be kept clear enough for takeoff, esp by shovelling and cleaning the **slush雪泥.**  However, due to the unstable conditions at the moment, no more planes will be taking off tonight. |

You are an air traffic controller. **A pilot has been diverted to your airport** and is not familiar with the layout. Describe the airport and runway using the printout to help you.

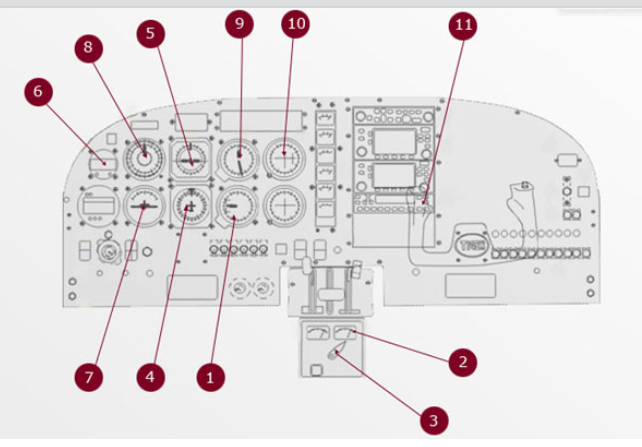
Today's landing condition

The winds are north -northwest, so plane should approach**飞机进场(to the runay for landing)**  from the south. The runways are in a North/South/East/West **grid** and planes should land on Runway 27L, parallel to **terminal buildings**, then turn right on **taxiway** Delta and head for Gate 22.

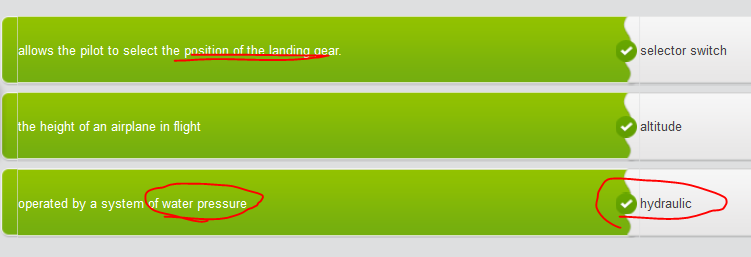
# Part4) Aircraft parts/components

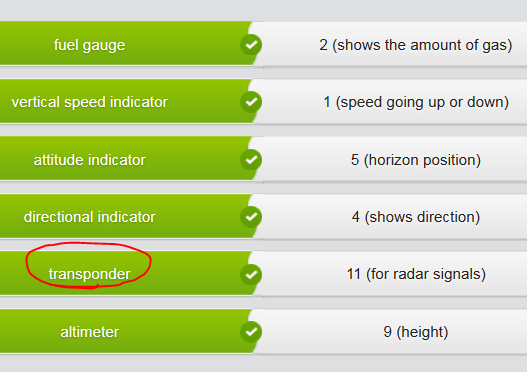
## Instruments in the Cockpit control pane

to remember the position of the instruments in the cockpit.



* **fuel gauge**: instrument (number 2 on the epaper) shows how much fuel remains in the tank
* **fuel tank(燃料箱) switch**: instrument (number 3 on the epaper) controls which tank the plane is drawing fuel from
* **directional indicator**：　instrument (number 4 on the epaper) shows the plane’s direction
* **altitude indicator**: instrument (number 5 on the epaper) displays the plane’s position relative to the horizon
* **air speed indicator**: instrument (number 8 on the epaper) displays how fast the plane is moving in **knots**
* **vertical speed indicator**
* **glide slope indicators**
* **digital clock**
* **turn coordinator转弯协调器 (herein, use “coordinator”, not “indicator”**
* **al’timeter**: instrument (number 9 on the epaper) displays the altitude in hundreds and thousands of feet?
* **Transponder**: transmit and response, an instrument (number 11 on the epaper) receives and transmits radar signals





## mp3) 2nd row) The emergency doors

Giving safety instructions. Listen to the passage about how to open **the emergency doors** on an aircraft



## Doors in an aircraft

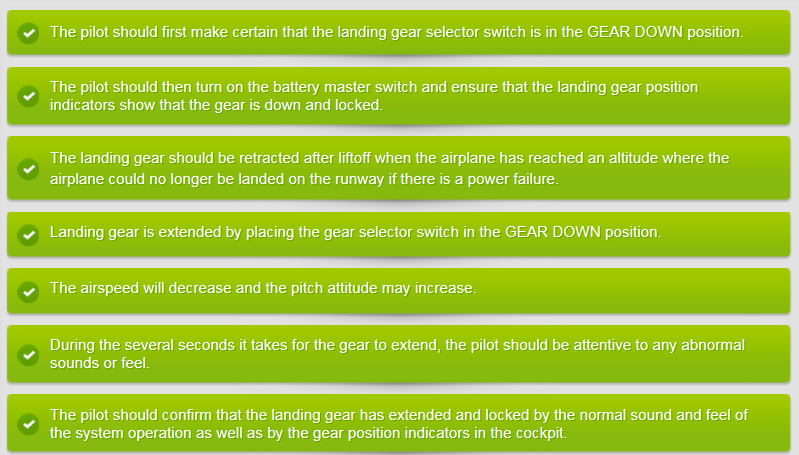
|  |
| --- |
| **Listen** carefully to the directions on how to open the emergency doors on this aircraft.   There are two types doors that you will need to know how to open. They are the:   * **upward opening passenger/crew entrance door => the entrance door** * **(inward) the overwing emergency exit door**位于机翼边上的紧急出口 **=> emergency exit door, near the “exit row紧急逃生口”**   ## To open the **upward opening passenger/crew entrance door,** follow these steps:   **Press** the external handle trigger marked 'PUSH' to allow the door handle to **spring out(弹出来**). **Turn** the external handle **counterclockwise**. Lightly **pull on** the external handle to initiate **gas spring([机] 气弹簧**) operation to open door.   ## To open the **overwing emergency exit door** 位于机翼边上的紧急出口**(near the “exit row” 紧急逃生口), please follow these steps:**  Note: T**he overwing emergency exit door** opens **inward**. It is on the right side of the passenger cabin and can be **unlatched(拉开（门等的）插栓)** from the inside or from the outside.   Support the exit door at the lower hand grip and the upper **latch handle锁柄**. Pull the upper **latch handle** marked EXIT PULL. Tilt the upper section of the exit door inboard and **lift the door** out of the bottom hook and pin fittings.   WARNING: The **overwing emergency exit door**位于机翼边上的紧急出口 **(near the “exit row” 紧急逃生口)**  weighs approximately 28 pounds. Be careful when you open the door, since the door is not supported by the aircraft when opened. |

## Landing gear

|  |
| --- |
| Landing Gear [航] 起落架；起落装置，着陆装置  [词条图片](javascript:;)  Landing gear position is controlled by a switch in the cockpit. In most airplanes, the gear switch is shaped like a wheel facilitate positive identification and to differentiate it from other cockpit controls.    An electrical **landing gear** retraction缩回system utilizes an electrically driven motor for gear operation. The system is basically an electrically driven jack for raising and lowering the gear. When a switch in the cockpit is moved to the UP position, the electric motor operates. If the switch is moved to the DOWN position, the motor reverses and the gear moves down and locks.  The primary benefits of being able to **retract**缩回 the landing gear are increased climb performance and higher cruise airspeeds due to the resulting decrease in drag. **Retractable**缩回 **landing gear systems** may be operated either hydraulically液压 or electrically, or may employ a combination of the two systems.    A landing gear safety switch, sometimes referred to as a **‘squat switch,**’ is usually mounted in a bracket on one of the main gear shock struts.  Because of their complexity, **retractable缩回 landing gears** demand a close inspection prior to every flight. The inspection should begin inside the cockpit. The pilot should first make certain that **the landing gear selector switch** is in the GEAR DOWN position. The pilot should then turn on the battery master switch and ensure that the landing gear position indicators show that the gear is down and locked.  Normally, the landing gear should be **retracted**缩回 after lift-off when the airplane has reached an altitude where, in the event of an engine failure or other emergency requiring **an aborted takeoff弃飞**, the airplane could no longer be landed on the runway. This procedure, however, may not apply to all situations.    The **operating loads运转负荷**placed on the landing gear at higher airspeeds may cause structural damage due to the forces of the airstream. Limiting speeds, therefore, are established for gear operation to protect the gear components from becoming **overstressed** during flight.  When the plane is approaching the runway for landing, **the landing gear is extended** by placing **the gear selector switch** in the GEAR DOWN position. As the landing gear extends, the airspeed will decrease and the **pitch attitude [航] 俯仰姿态**may increase. During the several seconds it takes for the gear to extend, the pilot **should be attentive to** any abnormal sounds or feel. The pilot should confirm that the landing gear has extended and locked by the normal sound and feel of the system operation as well as by the gear position indicators in the cockpit. |

## Check the landing gear

Put the directions for retracting or extending landing gear into the order by which a pilot would check them either prior to takeoff or prior to landing.

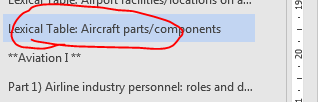


## Not mp3) 4th row) Aircraft parts



# STOP

## Identifying aircraft parts



# \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# \*\*Aviation II \*\*

# Lexical

* 无线电话；无线电话学 radiotelephony [,reɪdɪəʊtɪ’ 'lɛfəni ]
* pushback from the gate, the preparation for the plane to take off
* go around:
* clear to land:

# Part 1) Radiotelephony

## Not mp3)













pushback the plane from Gate of the terminal building to the “taxiway/taxiing lane” => stop till it is taxiing to the correct “runway” => on the runway, speed up till V1 to take off.





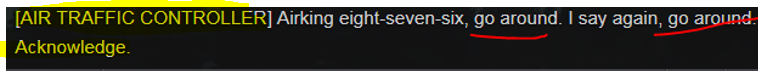
Roger “Airking eight-even-six pushing back”









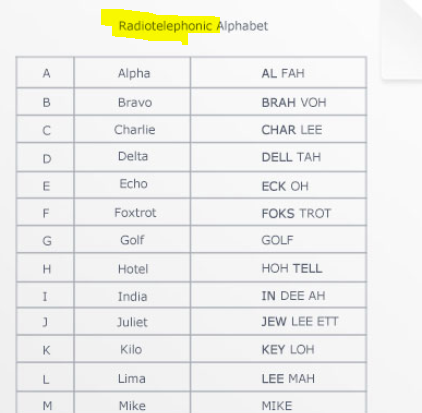
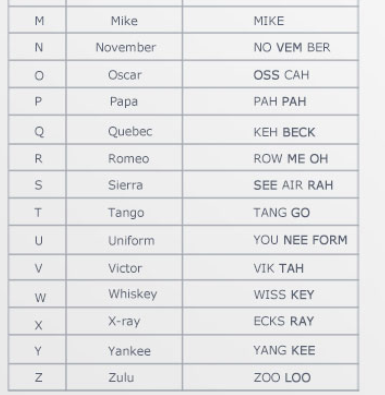


//it’s clear to take off V.S. it’s clear to land.

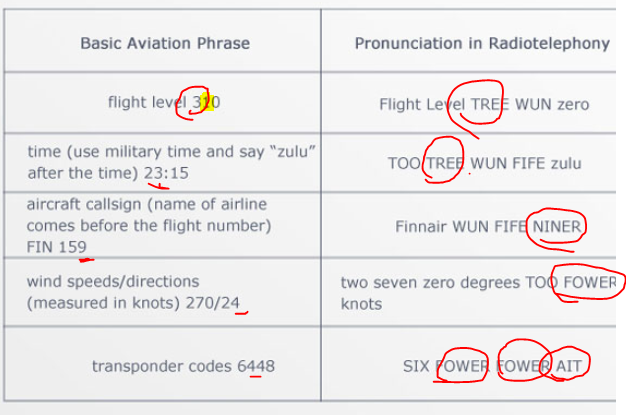
# Part 2) Respond to ATC’s instructions

## Radiotelephonic alphabet

Listen to the radiotelephony messages and write down the letters and numbers**. For example: ‘Alpha Bravo Charlie’ = ABC**

1: wun; 2: too; **3: tree; 4: Fower;** 8: AIT; 9: niner

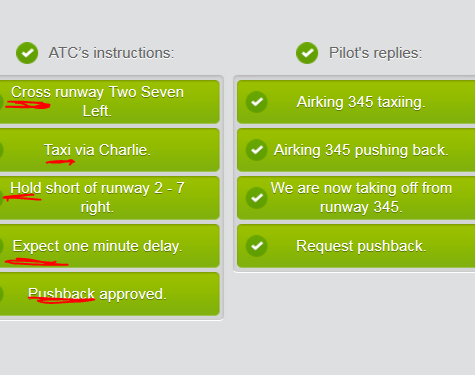


## Not mp3) 2nd row



## Respond to ATC’s instructions

ATC’s instructions are normally spoken in **imperative mood祈使句**.



**Rules for pilots to respond to air traffic controller (ATC)’s instructions**:

* Pilots should state their own **FAA-registered call sign** and **flight number** whenever transmitting messages with air traffic control.
* Pilots should **read back** the instructions given by air traffic controller (ATC).
* For each step of the **pushback**, taxi and takeoff process, pilots need to request and obtain permission to proceed.Once given permission to taxi to the runway designated for takeoff, pilots need to request and obtain permission to cross other runway.
* Air traffic control issues its final instructions to pilots as they are taking off from the runway. => False.
* Pilots usually check in with air traffic control once they are airborne.

## Follow ATC’ instructions (air traffic controller)

|  |
| --- |
| Pilot: Denver Ground Cessna 2345 Charlie at the Butler aviation **ramp** requesting departure information. //ramp, ram**p a**gent  ATC: (air traffic controller) Cessna 2345 Charlie Denver Ground runway “Three Six Left” is in use, wind 290 at 4, ceiling four thousand broken, visibility six miles, smoke and haze, temperature -2, **dew point** [露点温度](javascript:;)-3, altimeter 30.07. Be advised you have **Lima** (aka “L”.  Pilot: Denver Ground Cessna 2345 gate 27 request **pushback (push back from the gate of the terminal building to the taxiway/taxiing lane => runway for take off)**.  ATC(air traffic controller): Cessna 2345 negative. Expect one minute delay due **B(“Bravo”)** 747 **taxiing** behind.  Pilot: **Roger/Affirmative**. One minute delay due to **B(“Bravo”)** 747 taxiing behind.  ATC: Cessna 2345 **pushback approved** .  Pilot: **Roger/ Affirmative.** Cessna 2345 pushing back. => Repeat ATC’s instruction  Pilot: Denver Tower Cessna 2345 request **taxi instructions** for VFR flight to Phoenix. ATC: Cessna 2345, runway Three Six Left, taxi via **Charlie**, cross runway Two Seven Left, hold short of runway Two Seven Right. Pilot: Denver Tower Cessna 2345 runway “Three Six Left”, taxi via **Charlie**, cross runway Two Seven Left, hold short of runway Two Seven Right. => Repeat ATC’s instruction    ATC: Cessna 2345 via **holding point** **A(“Alpha”)** 1, one aircraft to depart before you from holding point **A(“Alpha”)** 2. **//holding point:** (飞机在空中的)暂留点；等待点  Pilot: Via **holding point** **A(“Alpha”)** 1, number two for departure, Cessna 2345. => Repeat ATC’s instruction  ATC: Cessna 2345 maintain runway heading, **climb to** 3500, and **turn right to** a heading of 090 (**9: niner).**  Pilot: Cessna 2345. After departure maintain runway heading, climb to 3500, and turn right to a heading of 090. => Repeat ATC’s instruction  ATC: Cessna 2345, **runway “Three Six Left” cleared for immediate takeoff .**  Pilot: Runway “Three Six Left” cleared for immediate takeoff Cessna 2345. => Repeat ATC’s instruction |

## Not mp3) 4th row

You're the pilot of an airplane preparing for takeoff. Listen and respond appropriately to the ground crew's instructions. 

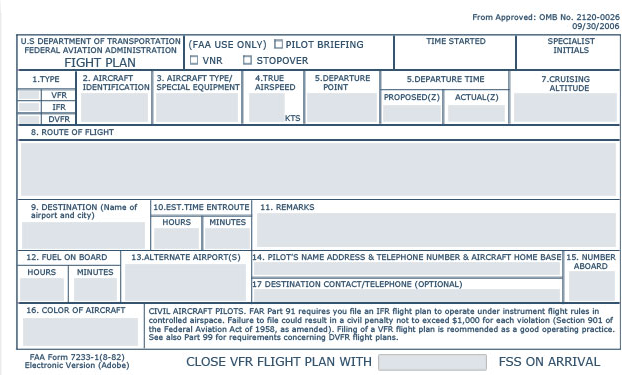
# Part 3) Communicate about in-flight issues

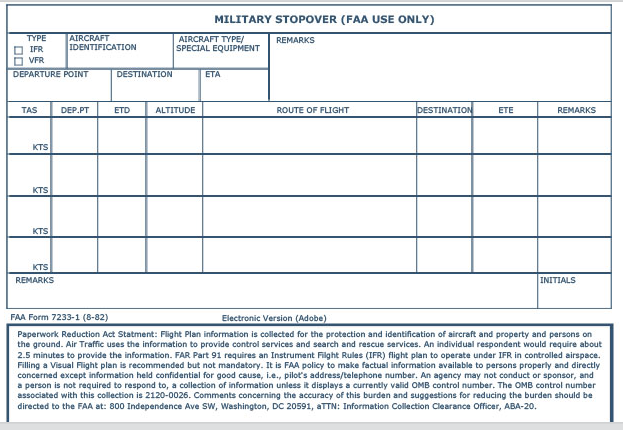
|  |
| --- |
| 飞机上飞行途中的: In-flight services are ones that are provided on board an aeroplane.  **[ 飞机餐 in-flight food； in-flight meal; in-flight services = FA's service = fight attendants']**  E.g. ...an inflight magazine. ...飞机上飞行途中提供的杂志  e.g Loukas tells CNN about the incident that **piqued/aroused his interest** in **in-flight food**. "It just stuck. I love learning all about how the food is selected for passengers to eat, how it's delivered to aircraft and everything in between. "It's quite a logistics-driven industry, and if passengers only knew half the things that airlines go through in order to get a meal to them **in-flight** to eat, they would be astounded." "Whilst you can't always rely on Turkish Airlines' **in-flight service**, its meals are always on point, delicious and there's plenty of it, even on short flights. Its **caterer** Do & Co is renowned to create some of the best **in-flight dishes飞机餐** in the world."  //**caterer ['ketərɚ]: (为办公、婚礼、派对等的) 餐饮供应者; 酒席承办者; the catering colleage 烹饪学校** |

## Aviation jargons ['dʒɑːg(ə)n] 行话，术语

See the “Lexical Table: aviation jargons行话，术语” at the top of this page

## **Flight plan**





|  |
| --- |
| **Filing a flight plan**  It’s a good idea to file a flight plan before you fly your small aircraft.  You can file it online or by calling a **Flight Service Station (FSS**) before you depart.  You can also file your flight plan or change your flight plan while you are **in-flight**.  If you are over half an hour late arriving to your intended destination, the **Flight Service Station (FSS**) will begin search-and-rescue procedures to find you.  In the US, FAA form 7233-1 is used for filing flight plans.  Here is the information that is needed:   Determine whether your flight will be done with **Visual Flight Rules (VFR)** or **Instrument Flight Rules (IFR).** Enter aircraft number and **callsign**. Enter aircraft type and special equipment (e.g. transponder or no transponder). Enter the aircraft’s **true airspeed (TAS)** in **knots海里**.  Enter the **departure airport identification code**. Enter the **estimated departure time (ETD)** in **Coordinated Universal Time (UTC), also known as Zulu Time.**  Enter **the cruising altitude**. Define your **route of flight**. Enter the **destination airport identification code**.  Enter your **estimated time en route** so that the estimated time of arrival (ETA) will be known.  Enter any other remarks to help clarify your situation to Air Traffic Control (ATC).  Specify **the amount of fuel** on board in hours and minutes. Specify **alternate airports** (PlanB) that you may stop at.  Enter your name, address, and telephone number. Enter the number of people on board, including passengers, crew, etc.  Enter the color of your aircraft.  Enter a destination phone number.   * File the plan online or call your Flight Service Station (FSS). |

## Not mp3) 1st row) Flight plan



|  |
| --- |
| My flight plan:    1. Type = check “VFR”  2. Aircraft Identification = N3346JA  3. Aircraft Type = Cessna 182 Skylane Model C  4. True Airspeed = 152 kts  5. Departure point =  6. Departure time proposed =  7. Cruising altitude =  8. Route of flight = direct to LSE via the Casnova VORTAC radial 130 to LSE 9. Destination =  10. Est. time en route =  11. Remarks = “N/A”  12. Fuel on Board = 3 hours 20 minutes  13. Alternate Airports = Rochester, Minnesota  14. Pilot's name =  15. Number aboard =  16. Color of Aircraft =  17. Destination Contact = |

## Airspace rules based on “airspace classification领空的分级”

Airspace is a three-dimensional area classified by altitude and location **??/(Two, not three?).** Airspace is first divided into either controlled or uncontrolled airspace.

* **Controlled airspace** means an area where **air traffic control** has the authority in controlling the movement of aircraft.
* **Uncontrolled airspace** is an area where **air traffic control** is considered unnecessary for the control of aircraft.

Airspace is further divided into classes that range from A to G. How any portion of airspace is classified can be determined by looking at **aero’nautical charts航空地图**.     
  
Each **class of airspace/territorial air** has specific rules for flying.  Generally, above an airport or an urban area, stricter rules apply to low-flying aircraft, but as the altitude increases, the rules become less strict or even a little **lenient**.  Specifically, each different **class of airspace/territorial air** has rules for whether aircraft should be flown **Instrument Flight Rules (IFR)** or **Visual Flight Rules (VFR)**.

* In class A, for example, aircraft must fly using IFR.  Since class A is so high (from 18,000 to 60,000 MSL, only IFR can be used to navigate aircraft in this area.
* In all other **classes of airspace**, aircraft can fly using either IFR or VFR.
* Class B airspace is located **around major airports**.
* Class C airspace is located around **airports with moderate activity.**
* Class D airspace is located around **airports with light activity.**
* Most all other controlled airspace is labeled as Class E.
* Class F airspace is not used in the United States, but in Germany, for example, Class F airspace is used for IFR flight in uncontrolled space (an area where **air traffic control** is considered unnecessary for the control of aircraft).
* Class G Airspace indicates **uncontrolled airspace**, or **the portion of airspace closest to the ground**.

Pilots should check the specific **airspace classifications** of each country they will visit since the details of **airspace classification** differ from country to country.

Group the different kinds of airspace in the correct categories according to how they are described in the text.

## Not mp3) 3rd row



  
 **18, 000: one eight zero**

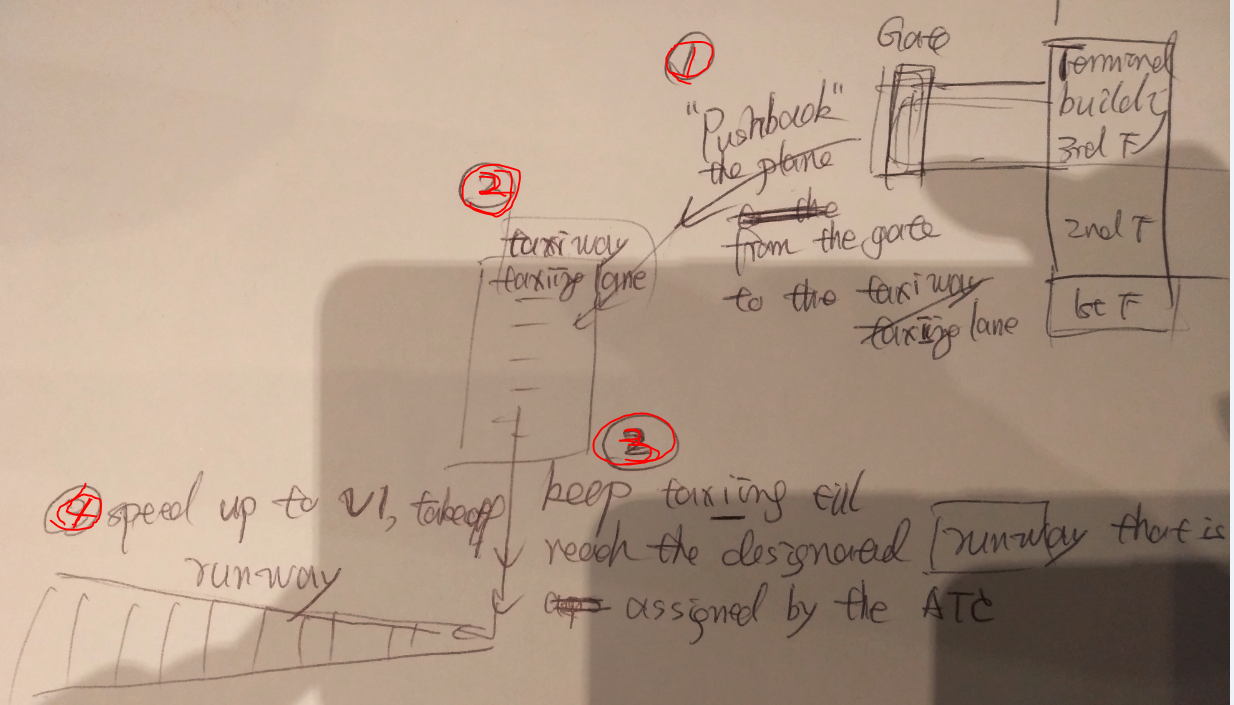
 **20, 0**00: two zero zero



 **//holding point**

# Part4) Safety landing a plane

## Stages of taking off an air



# STOP

## Stages of landing an aircraft

**Approach飞机进场(to the runay for landing) and Landing**   
**A ‘long final’ report** is made when making **a straight-in approach飞机进场(to the runay for landing)** at about 15 kilometers from **touchdown飞机着陆**.  A ‘final’ report is made when an aircraft turns onto **the final approach** within 7 kilometers of the runway.  The **landing approach clearance** will include the runway designation.

**Continue ( indicate “need to wait for the landing clearance落地许可)**   
If the runway is obstructed when the aircraft makes its ‘final’ report at 4 nautical miles or less from **touchdown飞机着陆**, but is expected to be available in good time for the aircraft to make a safe landing, the controller will delay **landing clearance落地许可** by telling the pilot to ‘continue.’  The controller may or may not explain why the **landing clearance落地许可**has been delayed, but the instruction to ‘continue’ is NOT an invitation to land and the pilot must wait for **landing clearance落地许可**before actually landing or initiate a missed approach**飞机进场(to the runay for landing)**.    
  
**Missed Approach/Going around复飞**Instructions to carry out **a missed approach** may be given to **avert/evade/dodge an unsafe situation**.  When a missed approach is initiated, cockpit workload is inevitably high.  Any transmissions to aircraft that is **going around复飞** shall be brief and kept to a minimum.  **In the event of a missed approach being initiated by the pilot, the phrases, ‘going around’ or ‘declaring a missed approach’ can both be used.**

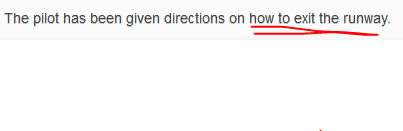
**Vacating腾出来／空出来 Runway and Communicating After Landing**  
Unless absolutely necessary, **ground control /ATC** will not give taxi instructions滑行指示 to pilots until **the landing roll** is complete.  Unless otherwise advised, pilots should remain on **tower frequency** until **the runway is vacated(腾出来／空出来).**

## Not mp3) 1st row













## Not mp3) 2nd row: Landing instructions



## Landing gear and post-flight checks

## Not mp3) 3rd row) Landing gear



The importance of landing gear   
Landing gear is the mechanism that supports an airplane when it is on the ground. It allows the airplane to taxi, take off, and land. Without some form of landing gear, such as wheels, **skids滑胎, or floats(? 花车),** an airplane would not be able to take off and would have to land on its **belly**.  
  
**Undercarriage〔飞机的〕轮胎** and wheels   
The wheels are equipped with **shock absorbers减震器，缓冲装置.** Most modern aircraft have **tricycle undercarriages (wheels of a plane or a train)**, where there are two main wheels (or **wheel assemblies**) under the wings and a smaller wheel (or **wheel assembly**) under the **nose**.

**//tricycle三轮车**

Retractable landing gear   
Many types of aircraft use **'retractable可收回/收缩的' landing gear**, which **retracts into the fuselage** of the aircraft during flight to decrease drag on the aircraft. **Retractable landing gear** often makes use of **hydraulics**, while emergency mechanical means are still available in the event of **hydraulic failure**.  
  
Extending to three green position   
When the landing gear is extended and locked into place, pilots confirm by saying:

* 'three **green'**, which is a reference to the lights on the cockpit dashboard that show green when the landing gear is ready to land.
* These same lights show **yellow** when the landing gear is in the up-locked position during flight. 飞行中是向上锁住的
* and **red** when the landing gear is in transit between the retracted position and fully down position.

## Not mp3) 3rd row)Post-flight checklist

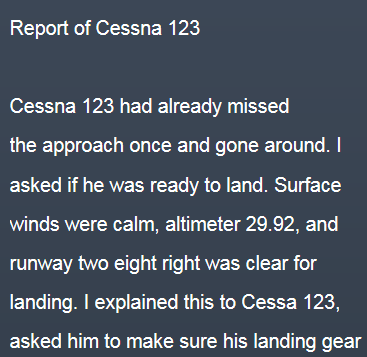
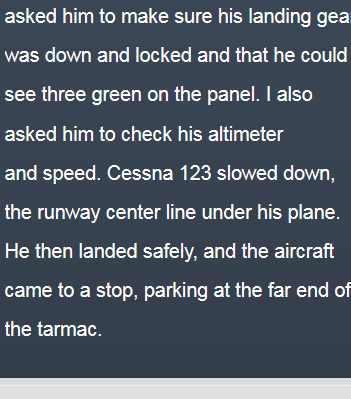


Post-flight checklist:

1. cool down your **engine** for approximately one minute before turning it off.  
2. At this point, you can **retract the flaps** 收回/缩回侧翼of the aircraft.  
3. Then you need to turn off the **electric fuel pump燃油泵**.  
4. Then cut off the **mixture idle cut-off** .   
5. The last thing you do is turn of the **master switch** that controls all electronic devices.  
6. Fill out the **logbook航空日志** for this flight.  
7. Record the **Hobb's meter**, which tells mechanics how much time the aircraft has been in operation.   
8. After that, you just need to park the aircraft in the **hangar飞机库** .

## Not mp3) 4th row) Safely landing a plane

The new pilot needs help to land safely. He has already missed the approach one time and is very nervous. Calm him and help bring down the airplane safely by describing the conditions and giving detailed instructions on how to land

# \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

# \*\*Aviation IIII \*\*

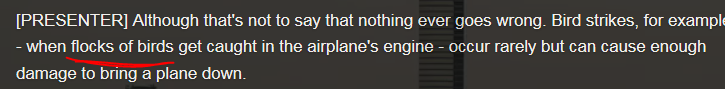
# Part 1) Aviation workers geared toward safety

## Not mp3) Emergency: Plane **going into a stall** over the Hudson river bcz of a birdstrike



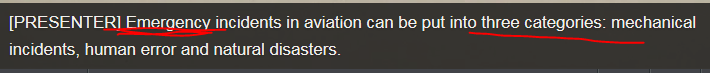
//所以可以是讨论 “emergency” IETLS topic

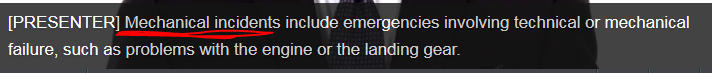






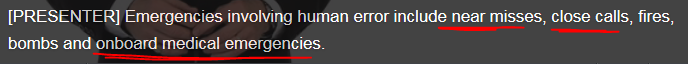








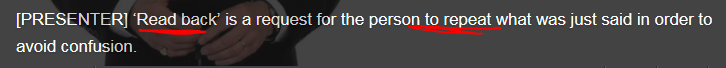




// (车辆、飞机等的)侥幸免撞, 侥幸脱险；死里逃生near misses = close calls 



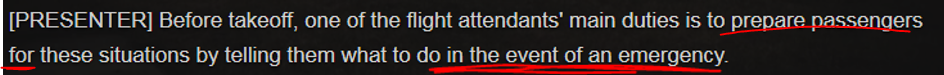
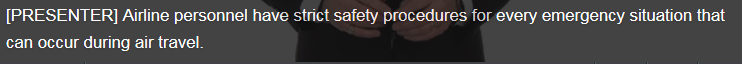




//Can I have your phone No.? xxx “OK, let me read that back to you. That’s, 14520979.”



//**wind shear:** [N](javascript:;)stress on an aircraft in an area in which winds of different speeds and directions are close together 风切变, 乱流 //**microburst**: ['maɪkro,bɚst] 旋气流，强烈且短时的下沉气流

//in case of xxx



# Part 2)Communicate effectively during an emergency by radiote’lephony [,reɪdɪəʊtɪ'lefɒnɪ]

## Not mp3) 1st row) Aircraft emergencies



**For details, see the “Lexical Table: Aircraft emergencies” at the top of this page.**

## Use radiote’lephony to give instructions

## Not mp3)2nd row



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| Pilot: **“Pan-pan call/distress call”** “This is InterStar Two **Niner Tree**. I am two miles south of Oakland. The controls indicate that there is a landing gear **shock absorber** fault (//emergency of a mechanical failure). The landing gear is currently down I have **three green**. It tells me not to **retract收回 the gear**. I'm also showing a nose steering fault. It shows that the landing gear **is perpendicular to center (和xx垂直成直角),** that is 90 degrees off center. **Do you copy? Over**.”  ATC: **Copy that**, Two Niner Three. Stand by so that we can figure out a course of action for you. We may have you land at San Jose, which is the closest airport for you.  Pilot: I can go to San Jose or some other destination if it calls for that. Does San Jose **have crash, fire and rescue capability**? I want to know what the winds are as well down there. If I've got high **crosswinds** with **a cocked nose竖起的鼻子**in the landing gear, I'm not very interested in going down there.  ATC: Winds at seven **knots**. It's forecasted to be basically clear skies for the six miles. Winds Two Niner Zero at Eight.  Pilot: Understood. Does San Jose **have crash, fire and rescue capability**, over?  ATC: That is correct. They **do have crash, fire and rescue capability**.  Pilot: I am required to land at the nearest **suitable** airport. I just want to be sure of that. That's all.  ATC: That's quite all right. We can make the arrangements as soon as possible.  Pilot: I'm awaiting further instructions from maintenance control. Are they looking at the problem?  ATC: That is correct. I will put them back on the phone as soon as they figure something out for you guys.  Pilot: We are **circling** over the bay at thirteen thousand feet. The situation is stable . We've got twenty-seven thousand pounds of gas. We've got plenty of time to make a good decision here.  ATC: Clear Two **Niner** Three for maintenance control.  Pilot: Go ahead, sir.  Maintenance control: Yes, sir. We are running an **airman diagnostic** as we speak. We are pretty convinced this is an indicator fault. We really are not worried about nose gear 90 degree out, but we do want to put you back down on the ground in the safest way possible. If you stand by, we will have the results of the **diagnostic** test shortly.  Pilot: **Assuming that** this is an indicator fault only, I am fine with going to San Jose and putting it down over there. If this is not an indicator fault, I prefer to go to SFO and put it down there, where there are long runways and plenty of life support there. Let me know what the **diagnostic** says, and we'll take it from there.  Maintenance control: **Copy that**, Two Nin**e**r **Tree** 293. |

## Scan and **skim**略读 a flight report

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| **Flight Report**  On June 13, 2010, at 1818 Pacific Daylight Time, InterStar Airways Flight 293, landed at San Francisco International Airport (SFO), San Francisco, California, with the nose wheels cocked at 90 degrees, which **is upwards perpendicular to** the ground. InterStar Airways was operating the airplane as a scheduled domestic passenger flight. The captain, first officer, four flight attendants, and 141 passengers were not injured. The flight departed Oakland, California, at 1531 as a **non-stop (direct flight)** to Sky Harbor International Airport, Phoenix, Arizona.   The captain noted no problems during the initial **departure**, and observed a positive rate of climb. The flight crew noted an error message displayed on the control board. There was a fault message for a nose landing gear **shock absorber**.  The data indicated that the gear handle was positioned to the down position, and there was an error message of a fault for the nose wheel steering.    The flight **diverted转向 to** San Jose, California. The captain was asked to perform **a flyby of** the tower for verification on the gear status. The tower, InterStar ground personnel, and a local news helicopter advised him that **the nose gear was cocked** 90 degrees to the left. When he found out this information, the captain decided to **divert to** SFO because it had optimum field conditions, a longer runway, and a better emergency support services. The crew flew for several hours to burn fuel so that they could land at a lighter weight.  The captain advised the cabin crew that **in the event that** the nose gear collapsed, evacuation from the front doors was not available so everyone would **deplane/disembark from** the rear exits. The flight crew continually updated the cabin crew and passengers about the situation, and advised the cabin crew to prepare for emergency procedures.    The captain flew the airplane for the landing. **He touched down** at 120 **knots**, and applied normal braking at 90 knots. He held the nose gear off of the ground as long as possible. At 60 knots, the flight crew shut down the engines. They did not use **reverse thrust** or auto-braking. During the landing, the forward cabin crew could smell burnt rubber. The air traffic control tower confirmed that there was no fire, and the captain announced this to the cabin crew. After this notification, the passengers **deplaned (disembarked from the plane)** normally using an air stair.  Upon **touchdown**, the tires rapidly **deflated泄了气 and tore apart,** and all **undercarriages** (the wheels of an aircraft, train) **were worn 磨损into** the **axle['æks(ə)l] [车辆] 轮轴**. During landing, the airplane's **trajectory** was not affected by the abnormal configuration or subsequent tire destruction, and the airplane stayed on the runway centerline. |

## Not mp3)4th row

You are the pilot of a Boeing 747. The airplane is experiencing mechanical problems with its landing gear. The air traffic controller, ATC, is giving you instructions on what to do. Listen to what he says and respond appropriately.

# Part 3)Avoid misunderstandings during an emergency by radiote’lephony [,reɪdɪəʊtɪ'lefɒnɪ]

## Onboard emergency items

## Not mp3)1st row Onboard air emergency items



**For details, see the “Lexical Table: Onboard air emergency items” on the top of this doc**

## Not mp3)2nd row



**//obstructed runway V.S. [ʌnəb'strʌktɪd] unobstructed runway: runway that has been cleared of other aircrafts and vehicles.**

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| 1. A late-arriving aircraft **was cleared to land** by Smith with **visual flight rules(VFR)** on runway 8/26.   2. The pilot was advised to switch to **an advisory frequency** and to cancel **instrument flight rules(IFR)** on **the approach frequency**.  3. After clearing the plane to land on runway 26, Smith went about his business in the radar room when he suddenly noticed on his radar screen that the aircraft was not headed for the stated runway - 26.   4. runway 35 had already been closed for a few months for repairs on the night of this event.   5. Smith knew that the pilot was no longer **on his frequency** , so he grabbed a tunable radio and attempted to contact the pilot to tell him that he was headed toward a closed runway.   6. The pilot listened to the news about his approaching a closed runway in silence, then confirmed that he understood the problem and headed toward the correct runway.   7. After a few more minutes, he landed safely on the [**ʌnəb**'strʌktɪd] **unob’structed runway (runway that has been cleared of other aircrafts and vehicles)**.   8. Smith was working alone in the tower and covering all of the events from his radar screen - he couldn't see the runways or the airplanes approaching them. |

# Part4)Deal with emergencies