

ФЕДЕРАЛЬНОЕ АГЕНТСТВО ВОЗДУШНОГО ТРАНСПОРТА МТ РФ



КАВМИНВОДЫАВИА

KMV

ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ УНИТАРНОЕ АВИАЦИОННОЕ ПРЕДПРИЯТИЕ

АВИАЦИОННЫЙ УЧЕБНЫЙ ЦЕНТР

AVIATION ENGLISH



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Lesson Structure

Books required:

Aviation English (student's book) Aviation English (teacher's book) Recorded texts on CD
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Stages of the Lesson:

1. Oral Presentation:	about 15 minutes
2. Questions and Answer Practice:	about 15 minutes
3. Exercises:	about 20 minutes
4. Oral Reconstruction:	about 20 minutes
5. Talking Points:	about 20 minutes

1. Oral Presentation

- a) Listening (Books shut)
 - b) Intensive Reading (Books open)
 - c) Listening (Books shut)
 - d) Chorus, Group or Individual Repetition (Books shut) (This step is optional)
 - e) Reading aloud individually (Books open)
- a) Listening (Books shut) – play the recording or read the text once. The students should listen and try to understand as much as they can. Ask the students what they have understood (in general).
- b) Intensive Reading (Books open) – read the text in small units (e.g. a sentence at a time, or less) making sure the students *really* understand it. Rather than give direct explanations, try to get as much information as possible from the students. **Explanations should be given entirely in English**, but don't carry direct-method teaching to absurd lengths. If the student fail to understand in spite of all your efforts, translate briefly and move on.
- c) Listening (Books shut). Play the recording or read the text once more.
- d) Chorus, Group or Individual Repetition (Books shut) – these are optional activities for **level 2 students**. If you conduct repetition exercises, first ask the whole class to repeat the text after you. Next divide the class into two or three groups and repeat the text once more. Finally, ask individual students round the class to repeat the text.
- e) Reading aloud individually (Books open) – ask individual students round the class to read the text.

!!! Oral Presentation should not occupy more than about 15 minutes.
DON'T SPEND TOO MUCH TIME ON ANY ACTIVITY!

2. Questions and Answer Practice

a) Teacher – Student part

Questions and Answer Practice should be based on the text. Questions should be asked individually round the class – preferably at speed. About 5 questions relating to each type should be sufficient. The four types are as follows:

- Yes/No questions
- Questions with *Who*
- Alternative questions (for 3-d level students)
- General questions (*When, Where, Why, How, etc.*)

b) Student – Teacher part

In order to understand the function of question words well, the student should be trained to ask questions himself. Intensive training of this sort prevents the student from using incorrect forms like ‘Where he went?’ etc. The student is asked what to ask. Then he asks precisely the same information but in a question form.

Teacher: Ask me if I’ve delivered mail on board.

Student: Have you delivered mail on board?

Teacher: Ask me who has delivered mail on board. (This type of questions can be asked in Russian in order to let students think of the structure of Who/What questions).

Student: Who has delivered mail on board?

Teacher: Ask me where I have delivered mail.

Student: Where have you delivered mail? etc.

3. Exercises

All exercises should be completed.

4. Oral Reconstruction

Invite individual students to reconstruct the text by referring to the key words. The students should be encouraged to speak without interruption for up to two minutes at a time and should try to use as many as possible of the expressions, structures etc. of the original story.

5. Talking Points

The final part of the Conversation Lesson should be devoted to free conversation. The text immediately suggests a subject for general discussion; individual students should be invited to speak impromptu.

WEATHER CONDITIONS

Wind, rain, snow, fog, frost and sunshine are all signs of the constant shifting of the lowest level of the atmosphere. This continual change is what we call the weather. The weather changes in four main ways: its movement, which can bring winds; its temperature, which can cause anything from frost to heat waves; its moisture content, which can bring rain and fog; and its pressure, which can cause anything from cloudless days to fierce storms. The average weather in one particular area is known as the climate. The atmosphere often forms into blocks of air, or air masses, over an area where conditions are similar. A front is the boundary between two air masses. Where warm and cold air masses meet, lighter air rises up over the cold, creating a low-pressure zone or depression. This brings storms as it develops and drifts eastwards. In a depression, the front breaks into two – a warm front and a cold front. As the depression passes, the warm front is usually ahead of the cold. It can bring gentle, steady rain. After the warm front has passed, there is generally a brief pause. The cold air then drives sharply towards the warm, forcing it upwards and creating huge clouds that bring heavy rain and thunderstorm.



EXERCISES

A. Find the odd word in each line:

- wind, gust, windshear, hurricane, dent, typhoon, draught, blow, breeze;
- rain, drizzle, dust, shower, storm, deluge, flood, sprinkle, rainbow;
- fog, mist, haze, clouds, dense, thick, steam, precipitation, tear;
- snow, hail, ice, frost, hoar-frost, slippery, freezing, cold, heat, wintry;
- son, sunshine, hot, sultry, sunny, sky clear, CAVOK, burning, stuffy;

B. Choose 3 words from each line and make up sentences. Write them down in you notebook.

C. Explain the following words:

fog hurricane hail gust rainbow CAVOK

D. Find the correct definition:

- | | | | |
|----------|--|----------|--------------|
| a | a measurement, in degrees, of the intensity of heat of a body | 1 | cloud |
| b | weather conditions particular to a given area | 2 | rain |
| c | a very large mass of air in the atmosphere in which the temperature is almost constant and which is divided from another mass by a front | 3 | temperature |
| d | an area of low atmospheric pressure | 4 | climate |
| e | precipitation or water which falls from clouds in small drops | 5 | thunderstorm |
| f | a mass of water vapour or ice particles in the sky that can produce rain | 6 | air mass |
| g | a violent weather condition in which wind speeds increase, rain or hail falls and there is lightning activity | 7 | depression |

E. Use the words in the box to the right of the text to form a word that fits in the same numbered space in the text:

Wind, rain, snow, fog, frost and 1) _____ are all signs of the constant shifting of the lowest level of the atmosphere. This 2) _____ change is what we call the weather. The weather changes in four main ways: its 3) _____, which can bring winds; its temperature, which can cause anything from frost to heat waves; its 4) _____ content, which can bring rain and fog; and its 5) _____, which can cause anything from 6) _____ days to fierce storms. The average weather in one particular area is known as the climate. The atmosphere often forms into blocks of air, or air masses, over an area where conditions are similar. A front is the 7) _____ between two air masses. Where warm and cold air masses meet, lighter air rises up over the cold, creating a low-pressure zone or depression. This brings storms as it develops and drifts 8) _____. In a depression, the front breaks into two – a warm front and a cold front. As the depression passes, the warm front is 9) _____ ahead of the cold. It can bring gentle, steady rain. After the warm front has passed, there is generally a brief pause. The cold air then drives 10) _____ towards the warm, forcing it upwards and creating huge clouds that bring heavy rain and thunderstorm.

- 1) SUN
- 2) CONTINUE
- 3) MOVE
- 4) MOIST
- 5) PRESS
- 6) CLOUD
- 7) BOUND
- 8) EAST
- 9) USUAL
- 10) SHARP

F. Retell the text using the following key words. Do not refer to the text.

signs of the constant shifting - the lowest level
continual change – weather - changes - 4 ways
average weather – climate
atmosphere - air masses – a front - boundary - two air masses
warm and cold air masses – meet - a low-pressure zone
storms - front - breaks - a warm front - a cold front
gentle – steady - rain
after - warm front - a brief pause
cold air - drives sharply - create - huge clouds - heavy rain - thunderstorm

G. Have you ever got in adverse weather conditions? Describe the event to your class.

PROBLEMS WITH PASSENGERS

There are several reasons behind air rage including queues, delays, lack of information, overbooking, passenger handling at airports and a non-smoking policy on board aircraft. As a result passengers are often tired, bored, frustrated and feeling stressed.

- 5 Consequently they get drunk before boarding and during the flight. Passengers should be aware that drunkenness on aircraft is against the law and may result in them being denied boarding. However, drunkenness is not the only form of unruly behaviour, which is not tolerated on aircraft:
- 10 -physical assault, verbal abuse or sexual harassment;
-behaving recklessly or negligently in a manner likely to endanger aircraft or an occupant;
-smoking in any compartment where smoking is prohibited;
-disobeying lawful commands from the commander of the
- 15 aircraft;
-behaviour which is violent, argumentative, threatening, intimidating or disorderly, including harassment.



- It used to be that when a passenger was badly behaved that was something just between them and the cabin staff member. It was
- 20 seen as bad for business to offend a fare-paying passenger. Cabin crew just had to put up with it. The “climate” has changed over the past three years. The airline runs courses on dealing with abusive passengers, keeps plastic handcuffs on board planes and actively encourages flight crew to report incidents to the police.
- 25 Its latest tactic is to issue senior staff with "yellow card" warning notices, to be handed to disruptive passengers. Aggressive passengers are not only a nuisance, they are a safety risk. It's a dangerous environment. You're thousands of feet in the air in a metal tube full of highly flammable fuel. If someone tries to open
- 30 one of the escape exits - that's something very serious.
In extreme cases a captain may decide to divert a flight, but it will be at a price. The average cost of an unscheduled landing is J40,000.

EXERCISES

A. Make up phrases with the following words:

- | | |
|---------------------|-------------------|
| a. air | 1. behaviour |
| b. non-smoking | 2. harassment |
| c. unruly / abusive | 3. rage |
| d. physical | 4. warning notice |
| e. sexual | 5. passenger |
| f. fare-paying | 6. risk |
| g. plastic | 7. environment |
| h. yellow card | 8. policy |
| i. safety | 9. handcuffs |
| j. dangerous | 10. assault |

B. Divide the following words into three groups:

air rage, queues, delays, lack of information, overbooking, passenger handling at airports, a non-smoking policy, tired, bored, frustrated, feeling stressed, get drunk, be denied boarding, unruly behaviour, physical assault, verbal abuse, sexual harassment, disobeying lawful commands, violent, argumentative, threatening, intimidating, disorderly, abusive, runs courses on dealing with abusive passengers, report incidents to the police, keep plastic handcuffs on board, yellow card" warning notices, disruptive, aggressive, a safety risk, dangerous environment, to divert a flight.

Reasons	Behaviour Characteristics	Result/ Consequence

C. Explain the following phrases or words:

air rage non-smoking policy deny boarding unruly behaviour fare-paying passenger
handcuffs unscheduled landing yellow card nuisance queue

D. Retell the text using the following key words. Do not refer to the text.

several reasons - air rage
 passengers – tired – bored - frustrated - stressed
 get drunk - drunkenness - against the law - be denied boarding
 physical assault - smoking - compartment - prohibited
 disobeying - lawful commands - violent
 It used to be - badly behaved - the cabin staff member
 bad for business - to offend - a fare-paying passenger - to put up with it.
 has changed – run courses on - keep plastic handcuffs - report incidents to the police
 "yellow card" - disruptive passengers
 aggressive passengers - a safety risk
 to divert a flight - be at a price (expensive)

E. Remember any incident with unruly passengers from your working experience and tell the class about it.

UNRULY PASSENGERS

5 A group of intoxicated passengers singing and indulging in horseplay in the aisles could initially receive requests from the flight attendants to be quiet and be seated with high spirits. However, if they fail to observe this request, the situation may escalate to a point where their behaviour could become threatening without being violent.

10 In a similar situation documented recently, the consequence of these actions resulted in the flight being diverted and the passengers in question off loaded. The captain felt these passengers might have posed a threat had the flight continued. The passengers paid a hefty penalty. They failed to reach their holiday destination and needed to book and pay for return flights on any airline that would accept them.

15 Airlines are starting to ban passengers who have been identified as being disruptive and unruly. There is talk of displaying signs in airports, which warn passengers of a zero tolerance policy for unruly behaviour. Many airlines specify rules and conditions of boarding on the back of the boarding pass.

20 Cabin crew has the authority to restrain drunk or violent passengers. Passengers deemed unruly may be refused boarding, or the flight may be diverted to have the occupants in question off loaded.



EXERCISES

A. Find a synonym from the box to the right. (There are several extra words)

1. drunk
2. obtain
3. stewardess
4. good mood
5. furious, angry
6. lately
7. outcome, result
8. menace
9. large, massive
10. punishment, fine

receive	flight attendant
penalty	recently
violent	hefty
high spirits	unruly
	restrain
threat	consequence
	behaviour
intoxicated	

B. Complete the second sentence, so that it has a similar meaning to the first sentence, using the word given. Do not change the word given.

Example:

The arrival time of John's plane is 09.05

at

John's plane arrives at 09.05.

1. A group of intoxicated passengers received requests from the flight attendants to be quiet.

were asked

A group of intoxicated passengers by the flight attendants.

2. If unruly passengers fail to follow this request, the situation could become threatening and violent.

don't

If unruly passengers, the situation could become threatening and violent.

3. The consequence of the disruptive behaviour resulted in the flight being diverted.

had been

The flight as a result of the disruptive behaviour.

4. The captain felt these passengers might have posed a threat had the flight continued.

if

The captain felt these passengers might have posed a threat continued.

5. The passengers paid a hefty penalty.

had to

The passengers penalty.

6. Unruly passengers failed to reach their holiday destination.

didn't

Unruly passengers their holiday destination.

7. Airlines are starting to ban disruptive and unruly passengers.

going

Airlines disruptive and unruly passengers.

8. Many airlines specify rules and conditions of boarding on the back of the boarding pass.

specified

Rules and conditions of boarding on the back of the boarding pass.

9. Cabin crew has the authority to restrain drunk or violent passengers.

restrained

Drunk or violent passengers by cabin crew.

10. Passengers deemed unruly may be refused boarding.

refuse

The air company to unruly passengers.

C. Find an extra word in each line:

A group of intoxicated passengers has received requests from the flight attendants to be quiet. If unruly passengers did fail to follow this request, the situation could become a threatening and violent. The consequence of the disruptive behaviour could be result in the flight being diverted. The captain felt these passengers might have posed a threat had the flight continued. The passengers have paid a hefty penalty. Unruly passengers failed to be reach their holiday destination. Now, airlines are starting to ban disruptive and such unruly passengers. Many airlines specify every rules and conditions of boarding on the back of the boarding pass. Cabin crew has the authority to restrain the drunk or violent passengers. Passengers deemed be unruly may be refused boarding.

- 0 has
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

D. Retell the text using the following key words. Do not refer to the text.

intoxicated passengers - initially - requests - to be quiet
fail to observe - behaviour - threatening - violent
recently - consequence - result in - divert - off loaded
pose a threat
to pay - hefty penalty
fail to reach - destination
to ban - passengers - disruptive – unruly
signs in airports - zero tolerance policy - unruly behaviour
rules and conditions - boarding pass
to have authority - to restrain - drunk - violent passengers
to refuse boarding
flight - be diverted

E. Remember any incident with unruly passengers from your working experience and tell the class about it.

GROUND DAMAGE

Aircraft are often victims of damage caused by ground equipment at the airport. In the act of servicing the aircraft between flights a great deal of ground equipment must operate in close proximity to the fuselage and wings. Occasionally the aircraft gets bumped or worse.

- 5 Damage may be in the form of simple scratches in the paint or small dents in the skin. However, because aircraft structures (including the outer skin) play such a critical role in the safe operation of a flight, all damage is inspected, measured and possibly tested to ensure that any damage is within safe tolerances. A dent that may look no worse than
- 10 common "parking lot damage" to an automobile can be serious enough to ground an airplane until a repair can be made.

An example of the seriousness of this problem was the December 26, 2005 depressurization incident on an Alaska Airlines MD-83 aircraft.

- 15 During ground services a ramp worker hit the side of the aircraft with a piece of ground equipment. This created a crease in the metal skin. This damage was not reported and the plane departed. Climbing through 26,000 feet the crease in the metal gave way due to the growing difference in pressure between the inside of the aircraft and the outside air. The cabin depressurized with a bang, frightening all
- 20 aboard and necessitating a rapid descent back to denser (breathable) air and an emergency landing.

- The three pieces of ground equipment that most frequently damage aircraft are the passenger boarding bridge, catering trucks, and cargo "beltloaders". However, any other equipment found on an airport ramp
- 25 can damage an aircraft through careless use, high winds, mechanical failure, and so on.

The generic industry colloquial term for this damage is "ramp rash."



EXERCISES

A. Find the opposite (antonym):

- | | |
|----------------------|---------------|
| 1. often, frequently | a. difficult |
| 2. close | b. outside |
| 3. simple | c. light wind |
| 4. safe | d. slow |
| 5. worse | e. seldom |
| 6. inside | f. outer |
| 7. careless | g. dangerous |
| 8. high wind | h. far |
| 9. rapid | i. careful |
| 10. inner | j. better |

B. Find the words in the text corresponding to the following definitions:

1. Nearness in space or time.
2. The outer layer of an aircraft.
3. Harm that is caused to something.
4. An allowable variation in something, which can be measured.
5. To prohibit an aircraft or member of an aircraft from flying.
6. An action designed to return something to good condition after damage.
7. A loss especially sudden, of cabin pressure.
8. A truck that is used to deliver food to the aircraft.
9. A bridge used by passengers and crew to get on board an aircraft.
10. An aerodrome vehicle used for loading cargo or baggage into the aircraft.

C. Explain the following words:

boarding bridge skin beltloader repair dent scratch crease damage proximity

D. Fill in the gaps:

Aircraft are often victims of 1) _____ caused by ground equipment at the airport. During servicing the aircraft ground equipment must operate in close 2) _____ to the fuselage and wings. Damage may be in the form of simple 3) _____ in the paint or small 4) _____ in the 5) _____. All damage is inspected, measured and possibly tested to ensure that any damage is within safe 6) _____. A dent can 7) _____ an airplane until a 8) _____ will be made.

In 2005 9) _____ incident happened to Alaska Airlines. During ground handling a ramp worker 10) _____ the aircraft. This created 11) _____ in the metal skin. This damage was not 12) _____ and the plane 13) _____. At 26,000 feet the crease in the metal gave way due to the growing 14) _____ in pressure. The cabin depressurized with 15) _____. The crew had to descent immediately to 16) _____ air.

E. Retell the text using the following key words. Do not refer to the text.

Aircraft – victims - damage - ground equipment
operate - close proximity - fuselage and wings
simple scratches – paint - dents - skin
all damage – inspect - measure - test – to ensure - safe tolerances
an example - seriousness - depressurization incident
a ramp worker - hit
create - a crease - metal skin
not report – depart – at 26,000 feet
cabin - depressurized – bang - frightening - rapid descent - denser (breathable) air - emergency landing.
most frequently - boarding bridge - catering trucks - cargo "beltloaders"
careless use - high winds - mechanical failure

F. Remember any ground incident from your (your colleagues’) working experience and tell the class about it.

G. Make up a ground incident report and write it down.

CARGO PROBLEMS

The Carriage by Air Act, 1972 governs the carriage of goods by air. The provisions of this Act apply to domestic flights in the same manner, as they are applicable to international flights carrying cargo. Airway bill is a document handed over by the consignor to the carrier along with the goods. The Air Way Bill is prepared in triplicate: for the carrier, for the consignee and the third is to be retained by the consignor. The Air Way Bill must contain the specified particulars for the correctness of which the consignor is responsible and he will be liable for all damages suffered due to the incompleteness of the particulars.

In the case of damage, the person entitled to delivery must complain to the carrier forthwith after discovery of damage and at the latest within 3 days from the date of receipt of luggage. In case of delay in delivery of goods the complaint must be lodged within 14 days from the date on which the goods have been actually delivered. Apart from damage to cargo there can be loss of cargo or a case of non-delivery, delay in delivering the goods. Wrongful and negligent transportation of cargo can also cause a lot of problems for crew and carrier. Negligence in dealing with cargo can provoke real danger in flight as well. Incorrectly secured items may cause a shift and as a result balance breaking or even loss. Another trouble is connected with the quality of package. Damaged containers can lead to cargo being restrained in all directions that can cause its perishing or serious problems with aircraft interior.



EXERCISES

A. Put the following words into alphabetical order according to their Russian equivalents:

Word	Translation	Alphabetical order
carriage		
goods		
domestic		
consignor		
responsible		
suffer		
delivery		
complain		
lodge		
loss		
negligent		
cause		
shift		
perish		

B. Make up sentences using the pattern and word-combinations below:

Pattern: It is considered + necessary + to do smth
important
obligatory

Example: - to apply Air Act to international flights

It is considered obligatory to apply Air Act to international flights.

1. to hand over the airway bill to the carrier
2. to prepare airway bill in triplicate
3. to complain to the career at the latest within 3 days in case of damage
4. to lodge the complaint within 14 days in case of delay
5. not to allow wrongful and negligent transportation of cargo
6. to check quality of package
7. to avoid shift, balance breaking and loss of breaking

C. Paraphrase the underlined phrases using the words in the box below:

The Carriage by Air Act, 1972 1) governs the carriage of goods by air. The provisions of this Act apply to domestic flights 2) in the same manner, as they are applicable to international flights. Airway bill is a document 3) handed over by the consignor to the carrier 4) along with the goods. The Air Way Bill is prepared 5) in triplicate. In the case of damage, the person 6) entitled to delivery must complain to the career 7) forthwith after discovery of damage. In case of delay in delivery the complaint must be 8) lodged within 14 days. 9) Apart from damage to cargo there can be loss of cargo. 10) Wrongful and negligent transportation of cargo can also 11) cause a lot of problems.

Negligence in dealing with cargo can 12) provoke real danger in flight as well. Incorrectly secured items 13) may cause a shift, balance breaking or loss of balance. Due to damaged containers cargo 14) can be thrown out in 15) cargo compartments. It can result in serious problems with aircraft interior, particularly if cargo starts perishing.

- | | |
|---------------------|---------------------------------------|
| a) may result in | h) incorrect and careless |
| b) can be scattered | i) pose a threat to the flight safety |
| c) cargo holds | j) given to |
| d) in three copies | k) lead to |
| e) authorized | l) submitted |
| f) regulates | m) except for |
| g) well as | n) together with |
| | o) immediately |

D. Retell the text using the following key words. Do not refer to the text.

The Carriage by Air Act – governs

apply to - domestic flights - international flights

Airway bill - a document - hand over - consignor - carrier

be prepared - in triplicate

In the case of – damage – complain - within 3 days

In case of - delay - complaint - be lodged - within 14 days

Apart from - loss of cargo - wrongful and negligent - transportation - cause a lot of problems

Negligence - provoke – danger

Incorrectly - secured items - cause - a shift - balance breaking – loss

quality of package- damaged containers – cargo be scattered - perishing - serious problems – interior

E. Remember any cargo incident from your (your colleagues') working experience and tell the class about it.

AIRCRAFT

Heavier than air aircraft, or aerodynes, include autogyros, gyrodynes, helicopters, and conventional fixed-wing aircraft. Fixed-wing aircraft generally use an internal-combustion engine in the form of a piston engine (with a propeller) or a turbine engine (jet or turboprop), to provide thrust that moves the craft forward through the air. The movement of air over the wings produces lift that causes the aircraft to fly. In the case of aerodynamic lift, the aircraft is kept in the air by wings or rotors. With engine lift, the aircraft defeats gravity by use of vertical thrust.



5 There are several ways to classify aircraft: for instance, by design, propulsion and usage.

In heavier-than-air aircraft, there are two ways to produce lift: aerodynamic lift and engine lift.

15 In a "conventional" configuration, the lift surfaces are placed in front of a control surface or tailplane. The other configuration is the canard where small horizontal control surfaces are placed forward of the wings, near the nose of the aircraft. Canards are becoming more common as supersonic aerodynamics grows more mature and because the forward surface contributes lift during straight-and-level flight.

20 We differentiate between piston engines and turbine engines. Turbine engines can be divided into turboprop and turbojet.

25 The major distinction in aircraft usage is between military aviation, which includes all uses of aircraft for military purposes (such as combat, patrolling, search and rescue, reconnaissance, transport, and training), and civil aviation, which includes all uses of aircraft for non-military purposes.

30 A size comparison of some of the largest aircraft in the world. The Airbus A380-800 (largest airliner), the Boeing 747-8, the Antonov An-225 (aircraft with the greatest payload) and the Hughes H-4 "Spruce Goose" (aircraft with greatest wingspan).

EXERCISES

A. Make up words from the flowing letters:

bunosmotic struth vritagy ceanstin alvencontion notsidintic superop

B. Make up phrases:

- | | |
|----------------------|------------------|
| 1. fixed-wing | a. lift |
| 2. to provide | b. configuration |
| 3. to produce | c. aviation |
| 4. to defeat | d. engine |
| 5. conventional | e. aircraft |
| 6. major | f. surface |
| 7. civil/ military | g. aircraft |
| 8. turbine | h. distinction |
| 9. control | i. thrust |
| 10. heavier-than-air | j. gravity |

C. Make up sentences using the pattern and word-combinations below:

Pattern: smth is/are used to provide ...
produce ...
increase ...
allow ...
prevent ...
generate ...

Example: engines – thrust

Engines are used to provide thrust to the aircraft.

1. The movement of the air – lift
2. Vertical thrust – to defeat gravity
3. Rudder – yaw
4. Elevator – up/down motion of an aircraft (pitch)
5. Flaps – lift and drag during final approach and landing
6. Slats – air to pass smoothly over the top of the wing thus reducing the possibility of a stall
7. Wing – the weight of the aircraft in flight
8. Anti-skid device – skidding
9. APU – electrical power, when the aircraft is parked on the ground
10. Avionics – electronic navigation, communication and flight control.
11. Landing gear – movement of an aircraft on the ground

D. Retell the text using the following key words. Do not refer to the text.

Heavier than air aircraft – include

Fixed-wing aircraft - internal-combustion engine - provide - thrust

The movement of air - produce lift - cause the aircraft to fly

defeat gravity - vertical thrust

to classify aircraft – for instance - by design - propulsion - usage

"conventional" configuration - lift surfaces - in front of a control surface

differentiate - piston engines - turbine engines

Turbine engines - be divided - turboprop - turbojet

The major distinction - usage

A size comparison - largest aircraft - the world

largest airliner - aircraft with the greatest payload - aircraft with greatest wingspan

E. Describe the type of aircraft you operate.

HIJACK

Aircraft hijacking (also known as skyjacking and aircraft piracy) is the take-over of an aircraft, by a person or group, usually armed. In most cases the pilot is forced to fly according to the orders of the hijackers.

5 Alternatively one of the hijackers flies the plane himself. The latter was the case in the September 11, 2001 attacks. In another case the official pilot hijacked the plane: he flew to Taiwan after threatening to crash the plane killing the passengers if the other members of the crew prevented him from flying to Taiwan.

10 Most aircraft hijackings are committed to use the passengers as hostages in an effort to obtain transportation to a given location, to hold them for ransom, or for the release of comrades being held in prison. Another common motive is publicity for some cause or grievance.

15 Hijackings for hostages have usually followed a pattern of negotiations between the hijackers and the authorities, followed by some form of settlement -- not always the meeting of the hijackers' original demands -- or the storming of the aircraft by armed police or special forces to rescue the hostages.

20 Options for preventing hijacking include screening to keep weapons off the airplane, putting air marshals on the flight. Cockpit doors on most commercial airlines have been strengthened, and are now bullet proof. The task of airport security is to prevent hijacks by screening passengers and keeping anything that could be used as a weapon (even smaller objects like nail clippers for example) off aircraft.



EXERCISES

A. Make up definitions using the following word rows:

Hijack: unlawful interference - take over control – intention – to force crew – different destination

Ransom: price – demand – pay – release of a captive

Prison: building – criminals – be kept – punishment

Publicity: attention – be given – someone/something – by the media

Negotiations: process – reaching agreement – by discussion

Demand: firm – official – request

Hostage: a person – taken by force – demands – be satisfied

Bullet proof: something – made of – strong material – bullets – pass through

Airport security: people – job – to protect – other people – against crime

Screening: process – passengers – be examined – presence – weapon – dangerous goods

B. Make up your own sentences with the words in italics above.

C. Fill in the gaps with the correct word:

Aircraft 1) _____ is the 2) _____ of an aircraft, by an armed person or group. In most cases the pilot 3) _____ to fly according to the orders of the hijackers. Most aircraft hijackings 4) _____ to use the passengers as 5) _____ to obtain transportation to a given location, to hold them for 6) _____, or for the release of comrades in prison. 7) _____ between the hijackers and the authorities can be held. The settlement not always meets the hijackers' original 8) _____. Sometimes armed police have to storm the aircraft 9) _____ the hostages. 10) _____ for 11) _____ hijacking include 12) _____ to keep weapons off the airplane, putting air marshals on the flight. Cockpit doors on most commercial airlines have been 13) _____, and are now 14) _____.

- | | | | | |
|-----|-----------------|-----------------|----------------|----------------|
| 1. | A jacking | B skyjacking | C terrorist | D terror |
| 2. | A take off | B take up | C take out | D take over |
| 3. | A are forced | B forced | C is forced | D forces |
| 4. | A are committed | B are completed | C are compound | D are compiled |
| 5. | A hostess | B hosts | C hostages | D hostlers |
| 6. | A random | B pay | C ranter | D ransom |
| 7. | A negotiations | B speaking | C chat | D arguments |
| 8. | A requests | B words | C thoughts | D demands |
| 9. | A to require | B to rescue | C to request | D to report |
| 10. | A opinions | B opportunities | C options | D optionals |
| 11. | A precluding | B preventing | C proposing | D prescribing |
| 12. | A screaming | B scrubbing | C screwing | D screening |
| 13. | A strengthened | B lengthened | C strengthened | D widened |
| 14. | A bullet proof | B ballet proof | C bullet prove | D bullet-head |

D. Retell the text using the following key words. Do not refer to the text.

Aircraft hijacking - take-over of an aircraft - an armed person or group
pilot - be forced to fly - orders of the hijackers
hijackers - flies the plane himself - September 11, 2001
official pilot - hijacked the plane - threaten to crash the plane
hijackings – be committed - passengers as hostages - to obtain transportation - to hold for ransom –
- release of comrades - prison
publicity - cause – grievance
negotiations - hijackers - authorities - settlement - not always – meet - original demands
storm the aircraft - to rescue the hostages
Options - preventing - screening - air marshals
Cockpit doors - be strengthened - bullet proof
task - airport security - to prevent hijacks - screening - keeping weapon off

E. Describe any aircraft hijacking you've heard or read about.

AIRMISS / AC PROXIMITY

A near miss or airmiss is an unplanned event that did not result in injury, illness, or damage - but had the potential to do so. Only a fortunate break in the chain of events prevents an injury, fatality or damage. Although human error is commonly an initiating event, a faulty process or system invariably permits or compounds the harm, and is the focus of improvement.



- The events that caused the near miss are subjected to root cause analysis to identify the defect in the system that resulted in the error and factors that may either amplify or ameliorate the result.
- 10 To prevent the near miss from happening again, the organization must institute teamwork-training, feedback on performance and a commitment to continued data collection and analysis, a process called continuous improvement.

15 Aircraft proximity is a situation in which the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised.

Aircraft proximity is classified as follows:

- risk of collision, when serious risk of collision has existed;
- safety not assured, when the AC safety may have been compromised;
- 20 - no risk of collision, when no risk of collision has existed;
- risk not determined, when insufficient information was available to determine the risk.

EXERCISES

A. Fill in the following table with the related words where possible:

Noun	Adjective	Verb
fortune
...	...	prevent
...	fatal	...
...	...	initiate
permission
...	...	improve
harm
...	...	perform
...	safe	...
collection
...	determined	...

B. Make up sentences according to the pattern:

Pattern: ... is/are known to be ...
thought
considered
believed

Example: Tu-204 – new generation aircraft

Tu-204 is known to be a new generation aircraft.

1. Airmiss - an unplanned event that does not result in injury, illness, or damage
2. A fortunate break in the chain of events – the only factor that can prevent an injury, fatality or damage
3. Human error - an initiating event
4. Faulty process - the focus of improvement
5. The preventive measures - teamwork-training, data collection and analysis
6. Continued data collection and analysis - a process of continuous improvement
7. Aircraft proximity - a situation in which the distance between aircraft and speed are unsafe.
8. Risk of collision – a situation, when serious risk of collision has existed.

C. Fill in the gaps with the words from the text above:

A near miss is an unplanned event that did not result in 1) _____, 2) _____, or 3) _____ - but had the potential to do so. Only a 4) _____ in the chain of events 5) _____ an injury, fatality or damage. Although human error is commonly an 6) _____ event, a faulty process or system invariably permits or compounds the harm, and is the focus of 7) _____.

The events that caused the near miss are 8) _____ to root cause analysis to identify the defect in the system that resulted in the error and factors that may either 9) _____ or 10) _____ the result.

To prevent the near miss from 11) _____ again, the organization must institute teamwork-training, feedback on 12) _____ and a commitment to continued data collection and analysis, a process called 13) _____.

Aircraft proximity is a situation in which the distance between aircraft 14) _____ their relative positions and speed have been such that the 15) _____ of the aircraft involved may have been compromised.

D. Retell the text using the following key words. Do not refer to the text.

A near miss - an unplanned event - not result in - injury, illness, or damage - the potential

fortunate break – chain of events - prevent an injury, fatality or damage

human error - an initiating event - faulty process or system - the focus of improvement

events that caused - near miss - root cause analysis - defect - error - factors - amplify - meliorate the result

To prevent – happening - institute - teamwork training - continued data collection and analysis

Aircraft proximity - distance - speed - unsafe

Aircraft proximity – be classified

- risk of collision

- safety not assured

- no risk of collision

- risk not determined – insufficient information

E. Describe any aircraft proximity you've heard or read about.

BELLY LANDING

A Belly landing is an emergency landing procedure in which an aircraft lands without its landing gear fully extended—using its underside, or belly, as its primary landing device. During a belly landing there is normally extensive damage to the airplane.

- 5 Belly landings are particularly risky because of the danger that the airplane may explode, flip over, or disintegrate if it lands too fast or too hard. Extreme precision is needed to ensure that the plane lands as straight and level as possible while maintaining enough airspeed to maintain control. Strong crosswinds, low visibility, damage to the airplane, or unresponsive instruments or controls greatly increase the danger of performing a belly landing.
- 10



- A good example of a belly landing in modern times is the July 2006 emergency landing of an Australian F-111 Fighter/Bomber. A wheel on the landing gear fell off after take-off, prompting the pilot to circle for 3 hours burning off fuel before coming in with his landing gear retracted. The F-111 suffered only superficial damage.
- 15

EXERCISES

A. Make verbs from the following nouns:

NOUN	VERB
extension	
danger	
explosion	
disintegration	
maintenance	
performance	
retraction	
increase	
damage	

B. Explain the following phrases/words:

belly landing

landing gear

underside

extensive damage

crosswind

C. Change all underlined phrases with the phrases from the text and fill in the table below:

A Belly landing is an emergency landing procedure in which an aircraft lands without its landing gear fully 1) down—using its 2) belly, as its 3) main landing device. During a belly landing there is 4) usually 5) major damage to the airplane. Belly landings are 6) especially 7) dangerous because of the 8) hazard that the airplane may explode, flip over, or separate if it lands too fast or too hard. 9) Excessive precision is needed to 10) guarantee that the plane lands as straight and level as possible while maintaining enough airspeed to 11) keep control. Strong crosswinds, low visibility, damage to the airplane, or 12) nonreacting instruments or controls greatly increase the danger of 13) making a belly landing. A good example of a belly landing 14) nowadays is the July 2006 emergency landing of an Australian F-111 Fighter. A wheel on the landing gear fell off after take-off, 15) urging the pilot to circle for 3 hours burning off fuel before coming in with his landing gear 16) down. The F-111 suffered only 17) minor damage.

	given word/ phrase	synonym from the text
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		

D. Retell the text using the following key words. Do not refer to the text.

belly landing - emergency landing procedure - without - fully extended
 use underside/belly - primary landing device
 normally - extensive damage
 risky – may explode - flip over - disintegrate - too fast - too hard
 Extreme precision - straight and level - airspeed - to maintain control
 Strong crosswinds - low visibility - damage - unresponsive instruments - increase the danger
 A good example - July 2006 - Australian Fighter
 A wheel - fell off - to circle for 3 hours – burn off fuel
 suffer - superficial damage

E. Describe any aircraft belly landing you’ve heard or read about.

AIRCRAFT BREAKDOWNS



- The major concern of aviation industry is safety of flight. The contributing factor in the domain is the condition of the aircraft. The event of technical malfunction and failure can be a reasonable cause for the accident, that's why such an intent attention at the performance of the plane is paid. The investigation of sample cases concerning the in-flight breakdowns can serve as a typical manual for coping with emergency situations of that kind. Let's get acquainted with one of such occasions. While on a night flight over the South China Sea an aircraft suffered a fuel transfer error.
- 5 It caused all four engines to run down. In order to correct an imbalance the Flight Engineer had all four engines feeding from one main tank, but forgot about the situation. Later on when he was briefly away from his station the main tank ran dry, creating an eerie silence on the flightdeck as the four engines suddenly ran
- 10 down. The electric ram air turbine was quickly deployed, restoring electrical power to the flight controls. The Flight Engineer returned to his post and started to restart the four engines. Several minutes later all was back to normal except for the deployed ELRAT. The only way to restore it was on the ground. Because of
- 15 this the aircraft had to continue flight with the ELRAT extended. It caused the ELRAT to overspeed and fail later in flight.
- 20

EXERCISES

A. Find the opposite from the text:

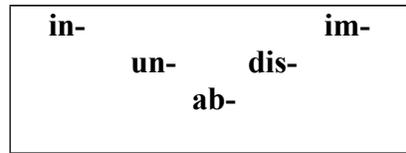
1. minor, superficial -
2. danger, risk, hazard -
3. function -
4. balance -
5. secondary, standby -
6. for a long time -
7. slowly -
8. earlier -
9. retracted -
10. cease, quit, stop, finish -

B. Rearrange the letters to make words from the text:

1. rorer -
2. frefus -
3. nalmibace -
4. cenlise -
5. nexted -

C. Choose the correct negative prefix:

correct	to fix
normal	to lock
to continue	stable
active	balance



D. Make up phrases used in the text:

- | | |
|-----------------------------------|------------------------|
| 1. to suffer a fuel | a. from one's station |
| 2. to correct | b. silence |
| 3. forget about | c. air turbine |
| 4. to be briefly away | d. transfer error |
| 5. to run | e. the flight controls |
| 6. eerie | f. the engines |
| 7. electric ram | g. to normal |
| 8. to restore electrical power to | h. the situation |
| 9. to restart | i. dry |
| 10. to be back | j. an imbalance |

D. Continue the following sentences:

1. During a night flight an aircraft suffered _____
2. In order to correct an imbalance the Flight Engineer _____
3. When the Flight Engineer was away, _____
4. The electric ram air turbine was quickly deployed in order to _____
5. The Flight Engineer returned to his post and _____
6. All was back to normal except for _____
7. The aircraft had to _____
8. The exposure during the rest of the flight caused _____

E. Retell the story from the point of view of:

- i. a Captain
- ii. a Flight Engineer
- iii. a passenger

F. Retell the story using the following key words:

night flight – to suffer - a fuel transfer error
to cause - engines - to run down
to correct an imbalance – F/E – to feed - to forget
to be away – to run dry - to create an eerie silence
electric ram air turbine – to be deployed - to restore electrical power
F/E - to return - to restart the engines
to be back to normal - except for
the only way
to continue flight with smth extended
to cause - to overspeed - to fail

G. Remember any aircraft breakdown from your (your colleagues’) working experience and tell the class about it.

APPROACH DELAYS



- In between the Aerodrome Tower (TWR) and the Area Control Center (ACC), lies the Approach Control. This service is responsible for a big area over one or more airports. This airspace is a portion of a larger one, which is named Terminal Area (TMA). TMAs receive constant converging traffic that destines the included airports. Controlling such traffic is particularly difficult because airplanes are moving in a relatively limited area and all have the same destination. Additionally, there is departing traffic, which has to be separated from the inbounds, plus any terrain obstacles.
- 5
- 10 In case of simultaneous arrivals, pre-designated elliptic patterns have been published, which are called Holding patterns. These are located over the navigational aids of the TMA. The rule is to give priority to the airplane that arrives first over the nav-aid and is at lower altitude than the others. For the second plane that arrives over the spot, but not far enough behind
- 15 the first one, delay is issued and it receives instructions to enter the Holding Pattern until a predefined time. If a third one arrives it is instructed to hold at a different altitude (higher) than the preceding. In this way a "stack" of airplanes, which are flying in elliptic orbits, is formed until time comes for them to initiate approach. Delays, due to holding in the air,
- 20 vary from 4 to 30 minutes. This is the main reason why it is necessary for all aircraft to be supplied with supplementary fuel. Nevertheless if a pilot declares insufficiency of fuel, his flight automatically receives priority clearance and is instructed to the nearest airport.

EXERCISES

A. Find the correct preposition from the box (not all prepositions should be used):

1. responsible ...
2. a portion ...
3. to be separated ...
4. ... case ...
5. give priority ...
6. ... lower altitude
7. be supplied ...
8. divide ...
9. depend ...
10. wait ...

<i>for</i>	<i>into</i>	<i>by</i>
	<i>of</i>	<i>into</i>
	<i>from</i>	<i>in ... of</i>
	<i>on</i>	<i>over</i>
<i>to</i>	<i>at</i>	<i>with</i>
	<i>for</i>	<i>without</i>

B. Make the following sentences passive:

1. Approach Control is a portion of a larger airspace, which Terminal Area. (name)
2. Departing traffic has from the inbounds, plus any terrain obstacles. (separate)
3. In case of simultaneous arrivals, pre-designated elliptic patterns, which Holding patterns. (publish (*Present Perfect*), call)
4. Holding patterns over the navigational aids of the TMA. (locate)
5. For the second plane that arrives over the spot, but not far enough behind the first one, delay (issue)
6. If a third plane arrives it to hold at a higher altitude than the preceding. (instruct)
7. In this way a "stack" of airplanes until time comes for them to initiate approach. (form)
8. This is the main reason why it is necessary for all aircraft with supplementary fuel. (supply)

C. Change the underlined phrases/ words with synonyms from the text:

In between the Aerodrome Tower and the Area Control Center, 1) is the Approach Control. This service 2) is in charge of a big area over one or more airports. This airspace is 3) a part of a larger one, which is 4) called Terminal Area. TMAs 5) obtain constant 6) closing traffic that 7) heads for the included airports. Controlling such traffic is 8) especially hard because airplanes are moving in a relatively limited area and all have the same destination. 9) What's more, there is departing traffic, which has to be separated from the inbounds, plus any terrain obstacles. In case of simultaneous arrivals, pre-designated elliptic patterns have been published, which are called Holding patterns. These are 10) situated over the navigational aids of the TMA. The rule is to give priority to the airplane that arrives first over the nav-aid and is at lower altitude than the others. For the second plane that arrives over the spot, but not far enough behind the first one, delay is 11) given and it 12) obtains instructions to enter the Holding Pattern until a predefined time. If a third one arrives it is instructed to hold at a different altitude (higher) than the 13) previous. 14) Thus, a "stack" of airplanes, which are flying in elliptic orbits, is formed until time comes for them to 15) commence approach. Delays, due to holding in the air, 16) change from 4 to 30 minutes. This is the 17) primary reason why it is necessary for all aircraft to be supplied with 18) additional fuel. Nevertheless if a pilot declares 19) lack of fuel, his flight automatically receives priority clearance and is instructed to the nearest airport.

D. Make up sentences according to the pattern using prompts below:

Patterns: ... is/are/was/were **to** verb
... have/ has **to** verb

Example: A pilot – follow the controller's instructions
A pilot is to follow the controller's instructions.

1. TMAs - receive constant converging traffic
2. Departing traffic- be separated from the inbounds
3. In case of simultaneous arrivals, pre-designated elliptic patterns – be published.
4. The priority – be given to the airplane that arrives first over the nav-aid and is at lower altitude than the others.
5. For the second plane delay - be issued.
6. The second aircraft - receive instructions to enter the Holding Pattern until a predefined time.
7. A third plane - hold at a different altitude (higher) than the preceding.

8. All aircraft - be supplied with supplementary fuel.
9. If a pilot declares insufficiency of fuel, his flight - receive priority clearance.
10. If a pilot declares insufficiency of fuel – be instructed to the nearest airport.

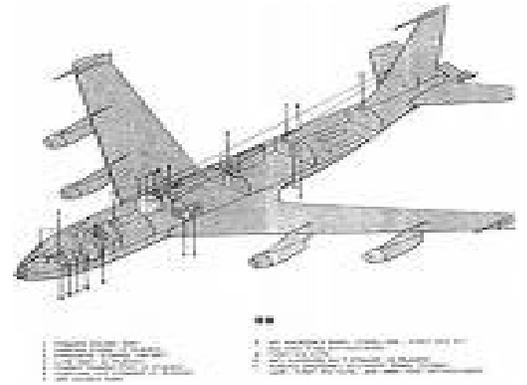
E. Retell the text using key words below. Do not refer to the text.

Aerodrome Tower - Area Control Center - Approach Control
is responsible for
a portion of - named Terminal Area
receive - converging traffic
Controlling - particularly difficult - moving - relatively limited area - the same destination
departing traffic - to be separated – inbounds - obstacles
simultaneous arrivals - pre-designated elliptic patterns - Holding patterns
over the navigational aids
rule - priority to - arrives first - at lower altitude
second plane - delay is issued - receive instructions - enter the Holding Pattern
third - hold at a different altitude
a "stack" of airplanes - initiate approach
main reason - necessary - to be supplied - supplementary fuel
declare - insufficiency of fuel - priority clearance - the nearest airport

F. Remember any approach delay from your working experience and tell the class about it.

EMERGENCY EQUIPMENT

Two aspects that influence survivability in accidents are well-trained cabin crew and top-notch training equipment, and airlines and manufactures are working hard to provide them. Prescribed safety and survival equipment that the crew or passengers are expected to use or operate at the time of an emergency shall be reliable, readily accessible and easy identified, and its method of operating shall be plainly marked. All equipment must be checked before flight for proper operation and expiry date correspondence. In some cases it should be sealed (masks, life jackets, extinguishers, bottles etc.). The interior layout of the cabin and the position and number of emergency exits, including the means of locating and illuminating the escape paths and exits, shall be such as to facilitate rapid evacuation of the aeroplane in condition likely to occur following an emergency landing. First and foremost are the primary escape channels, the door-mounted slides by which passengers escape and they need to be quickly deployed. The slide surface must be hardwearing and durable; the girt attachment strong, while the right appearance and function is retained. All door slides, when armed, are designed to inflate automatically. Except for that all door slides are equipped with a manual inflation handle for the purpose off their activation in case of automatics failure.



EXERCISES

A. Make as many parts of speech as you can from the following words:

Word	Noun	Adjective	Adverb	Verb
survive				
train				
equip				
provide				
rely				
access				
expire				
lay out				
illuminate				
attach				
appear				
design				
activate				
fail				

B. Make up your own sentences with the following words/phrases. Write down your sentences in your notebook.

In some cases including in case of likely First and foremost Except for for the purpose

C. Fill in the missing verb. Put it in passive where necessary:

Two aspects that 1) _____ survivability in accidents are well-trained cabin crew and top-notch training equipment, and airlines and manufactures are 2) _____ hard to 3) _____ them. Prescribed safety and survival equipment that the crew or passengers 4) _____ to use or operate at the time of an emergency shall be reliable, readily accessible and easy identified, and its method of operating shall be plainly marked. All equipment must 5) _____ before flight for proper operation and expiry date correspondence. In some cases it should 6) _____ (masks, life jackets, extinguishers, bottles etc.). The interior layout of the cabin and the position and number of emergency exits, including the means of locating and illuminating the escape paths and exits, shall be such as to 7) _____ rapid evacuation of the aeroplane in condition likely to 8) _____ following an emergency landing. First and foremost are the primary escape channels, the door-mounted slides by which passengers 9) _____ and they need to be quickly 10) _____. The slide surface must be hardwearing and durable; the girt attachment strong, while the right appearance and function 11) _____. All door slides, when armed, 12) _____ to 13) _____ automatically. Except for that all door slides 14) _____ with a manual inflation handle for the purpose off their activation in case of automatics failure.

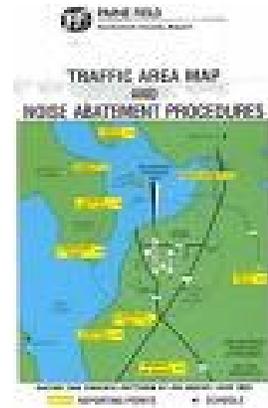
D. Retell the text using key words below. Do not refer to the text.

Two aspects - influence - survivability - well-trained cabin crew - top-notch training equipment
survival equipment - expected to use or operate - be reliable - accessible - easy identified - plainly marked
equipment - be checked - proper operation - expiry date correspondence
in some cases - be sealed
interior layout - position and number of emergency exits - locating - illuminating - escape paths and exits - to
facilitate - rapid evacuation
First and foremost - primary escape channels - the door-mounted slides
slide surface - hardwearing and durable
girt attachment – strong - right appearance and function - retained
door slides – be designed - to inflate automatically
be equipped - manual inflation handle - automatics failure

E. Describe the emergency equipment on board the aircraft you operate.

NOISE ABATEMENT PROCEDURE

According to the National Institutes of Health, hundreds of millions people are exposed to noise levels that can hamper their work or disrupt their sleep, and many million risk health problems due to aircraft noise. Aircraft noise also puts stress on domestic animals and wildlife. In remote areas, helicopters and military aircraft often frighten animals. There is concern that increasing noise levels in the oceans may confuse the natural sonar that whales use to navigate, communicate, and locate food. Noise pollution is not a necessary price to pay for living in an industrial society. Much can be done to reduce the severity of the problem. In the industrialized nations, governments have laws and policies to counter noise pollution. Since 1969 the Federal Aviation Administration (FAA) has monitored and controlled noise from airplanes. The agency requires that new aircraft meet specified noise standards and that old ones be retrofitted or retired. Local airport authorities, with FAA approval, reduce the impacts of noise pollution by routing flights over water or unpopulated areas on takeoff and landing, and by limiting traffic at night. The FAA also encourages airports and local governments to take steps on the ground, such as constructing sound barriers, insulating buildings, and restricting residential development in noisy areas. In extreme cases, airports have relocated people living under flight paths.



EXERCISES

A. Remember antonyms and synonyms to the following words and fill in the table below:

Word/phrase	Antonym	Synonym
noise		
hamper		
disrupt		
domestic		
remote		
increase		
natural		
reduce		
severity		
new		
retrofit		
approval		
impact		
extreme cases		

B. Fill in the gaps with the given words:

such as *to take steps* *put stress on* *There is concern that* *Much can be done to*
meet standards *In extreme cases* *be exposed to*

1. Millions people _____ noise levels that can hamper their work or disrupt their sleep.
2. Aircraft noise _____ domestic animals and wildlife.
3. _____ increasing noise levels in the oceans may confuse the natural sonar that whales use to navigate, communicate, and locate food.
4. _____ to reduce the severity of the problem.
5. The agency requires that new aircraft _____ .
6. The FAA encourages airports and local governments _____ on the ground, _____ constructing sound barriers, insulating buildings, and restricting residential development in noisy areas.
7. _____ airports have relocated people living under flight paths.

C. Make up sentences with the following phrases and write them down:

1. *such as*

2. *be exposed to*

3. *put stress on*

4. *There is concern that*

5. *Much can be done to*

6. *meet standards*

7. *to take steps*

8. *In extreme cases*

D. Retell the text using key words below. Do not refer to the text.

be exposed to noise levels - hamper work - disrupt sleep - risk health problems - aircraft noise

put stress on - domestic animals – wildlife

remote areas - frighten animals

There is concern - increasing - confuse - natural sonar - whales - to navigate – communicate - locate food

Noise pollution - not a necessary price – an industrial society

Much can be done - reduce the severity - problem

laws - policies - to counter noise pollution

requires - new aircraft - meet standards - old - be retrofitted – retired

reduce - impacts - noise pollution - routing flights over water - unpopulated areas - takeoff and landing - limiting

encourage - to take steps - constructing - insulating - restricting - residential development

relocate people - under flight paths

E. Do Noise Abatement Procedures exist in all airports? What does it depend on?

HEALTH PROBLEMS

One can encounter different health problems, which can occur during flight or as a result of it. The common case is Aerophobia, or fear of flying, is an anxiety unlike other phobias because it can recur even after supposedly successful treatment. The attitude of

5 aerophobics is caused mainly by lack of knowledge about the relative safety of flying. There are some elements of aerophobia that have been distinguished.

- Claustrophobia, in which a person feels trapped.
- A panic related anxiety in which the subject fears that he or she may experience a heart attack, go crazy or lose control yet have no means of escaping from the aircraft.
- Space phobia, whereby a person is terrified by the idea of being 'surrounded by nothingness'.
- The fear of the aircraft crashing because of adverse weather, mechanical failure or a terrorist bomb.
- The fear of heights and so on.

Jetlag is another common word associated with aviation. Most passengers experience it after trips of over 3 hours either East or West. The main cause of jetlag is the disruption of the body's circulation rhythms or more commonly known as our 24-hour clock. Another contributory factor is the oxygen lack in the pressurized cabin. One more concern of scientists is that people are more likely to catch a cold if they travel by air. As many as one in five passengers develops a cold within a week of flying because of bacteria and viruses in the recycled air of the cabin. But catching a cold may be the least of a traveler's worries. Other airborne infections, which can be transmitted between passengers, include tuberculosis, influenza (flu), measles, mumps and chicken pox.



EXERCISES

A. Find the odd word in each line and explain why you think so:

- a) heart attack Space phobia adverse weather Claustrophobia health problems
b) mechanical failure a terrorist bomb depressurization delay jetlag
c) a cold tuberculosis panic influenza (flu) measles mumps chicken pox

B. Make up sentences according to the pattern using prompts below:

Patterns: One can encounter(what), which can occur (when).

Example: health problems – during the flight

One can encounter health problems, which can occur during the flight.

1) windshear – approach	6) thunderstorm activities – en-route
2) unruly passengers – in flight	7) burst tyre – before take off
3) cargo problems – carriage of dangerous goods	8) bird ingestion – on landing
4) delays – before the flight	9) a near miss – at cruising Flight Level
5) ground incident – during ground handling	10) insufficiency of fuel – holding procedures

C. Choose from the list (a-l) given below the best phrase to fill each of the numbered spaces. Some of the suggested answers do not fit at all.

One can encounter different health problems, **(1)** The common case is Aerophobia, or fear of flying, is an anxiety, **(2)** The attitude of aerophobics is caused mainly **(3)** There are some elements of aerophobia that have been distinguished.

- Claustrophobia, in **(4)**
- A panic related anxiety in **(5)**
- Space phobia, whereby a person is terrified by the idea of being 'surrounded by nothingness'.
- The fear of the aircraft crashing because of adverse weather, mechanical failure or a terrorist bomb.
- The fear of heights and so on.

Jetlag is another common word associated with aviation. Most passengers experience it after trips of over 3 hours either East or West. The main cause of jetlag is **(6)** Another contributory factor is **(7)** One more concern of scientists is **(8)** As many as one in five passengers develops a cold within a week of flying **(9)** But catching a cold may be the least of a traveller's worries. Other airborne infections, **(10)** ... , include tuberculosis, influenza (flu), measles, mumps and chicken pox.

- a) which the subject fears that he or she may experience a heart attack, go crazy or lose control yet have no means of escaping from the aircraft
- b) the disruption of the body's circulation rhythms or more commonly known as our 24-hour clock
- c) because of bacteria and viruses in the recycled air of the cabin
- d) which can recur even after supposedly successful treatment
- e) that people are more likely to catch a cold if they travel by air
- f) that can hamper their work or disrupt their sleep
- g) which can occur during flight or as a result of it
- h) by lack of knowledge about the relative safety of flying
- i) which a person feels trapped
- j) which can be transmitted between passengers
- k) which has to be separated from the inbound
- l) the oxygen lack in the pressurized cabin

D. Retell the text using key words below. Do not refer to the text.

encounter - health problems - occur - during flight

fear of flying - an anxiety - can recur - successful treatment

aerophobia - is caused - lack of knowledge - relative safety of flying

elements of aerophobia - distinguish

Claustrophobia - a panic related anxiety – space phobia - the fear of the aircraft crashing - the fear of heights

Jetlag - associated with aviation

experience - after trips - over 3 hours

cause of jetlag - disruption - body's circulation rhythms - 24-hour clock

contributory factor - oxygen lack - pressurized cabin

concern of scientists - to catch a cold

bacteria - viruses - recycled air of the cabin

other airborne infections - include – tuberculosis - influenza (flu) – measles - mumps - chicken pox

E. Have you ever encountered health problems during the flight? Tell the class about it.

FLIGHT PLAN PROBLEMS

- Flight Plan –is specified information provided to Air Traffic Service units, relative to an intended flight or portion of a flight of an aircraft. Flight Plan to be provided with ATC Service shall be submitted at least sixty minutes before departure, or, if submitted during flight, at a time which will ensure its receipt
- 5 by the appropriate ATS unit at least 10 min. before the aircraft is estimated to reach the entry point into a control area or the point of crossing an airway. When it becomes evident that some changes in FP are necessary request for such changes shall include information as indicated: change of cruising level, change of route, change from VFR to IFR in case of weather deterioration.
- 10 Subject to the provisions of the documentation applied, all changes to a FP (IFR or VFR) shall be reported as soon as practicable to the appropriate ATS unit. Information regarding fuel endurance or total on board, if incorrect at time of departure constitutes significant changes to the FP and as such must be reported. To close a FP a report of arrival shall be made in person, by
- 15 radiotelephony or via data link at the earliest possible moment after landing to the appropriate ATS unit at the arrival aerodrome.



EXERCISES

A. What do we call the following?

- a specified information provided to Air Traffic Service units, relative to an intended flight or portion of a flight of an aircraft?
- a service responsible for air traffic?
- when weather conditions become worse?
- a number of persons on board?
- quantity of fuel in hours and minutes?
- a flight carried out with the help of instruments?
- rules of flight in fine weather conditions?

B. Explain the words in English:

1. A specified information; 2. Relative to an intended flight; 3. To submit a flight plan; 4. Receipt; 5. To become evident; 6. Request should include information; 7. Weather deterioration; 8. As soon as practicable; 9. Appropriate; 10. Arrival aerodrome; 11. Incorrect.

C. Form the phrases according to the text:

- | | |
|------------------------|------------------------|
| 1. specified | a. a flight |
| 2. portion of | b. evident |
| 3. to be provided with | c. point |
| 4. entry | d. deterioration |
| 5. control | e. area |
| 6. to become | f. information |
| 7. to include | g. significant changes |
| 8. weather | h. ATC Service |
| 9. subject | i. information |
| 10. to constitute | j. to the provisions |

D. Fill in prepositions:

Flight Plan –is a specified information provided (in; to; within) Air Traffic Service units, relative ... an intended flight or portion ... a flight ... an aircraft. Flight Plan to be provided with ATC Service shall be submitted ... least sixty minutes before departure, or, if submitted during flight, ... a time, which will ensure its receipt by the appropriate ATS unit least 10 min. before the aircraft is estimated to reach the entry point into a control area, or the point ... crossing an airway. When it becomes evident that some changes ... FP are necessary request for such changes shall include information as indicated: change ... cruising level, change ... route, change ... VFR ... IFR in case of weather deterioration. Subject to the provisions of the documentation applied, all changes to a FP (IFR or VFR) shall be reported as soon as practicable to the appropriate ATS unit. Information regarding fuel endurance or total ... board, if incorrect at time ... departure constitutes significant changes to the FP and as such must be reported. To close a FP a report of arrival shall be made ... person, ... radiotelephony or ... data link at the earliest possible moment after landing to the appropriate ATS unit ... the arrival aerodrome.

E. Fill in the correct words:

1. Flight Plan –is provided to Air Traffic Service units, relative to an ... flight or ... of a flight of an aircraft.
2. Flight Plan to be provided with ATC Service shall be ... at least sixty minutes before departure, or, if submitted ... flight, at a time which will ensure its ... by the appropriate ATS unit at least 10 min. before the aircraft is estimated to reach the ... point into a control area or the point of ... an airway.
3. When it becomes ... that some changes in FP are ... request for such changes shall include information as indicated: change of ... , change of route, change from ... to ... in case of weather deterioration.
4. Subject to the ... of the documentation applied, all changes to a FP (IFR or VFR) shall be reported as soon as practicable to the appropriate ATS unit.
5. Information ... fuel endurance or total on board, if incorrect at time of departure constitutes significant changes to the FP and as such must be reported.
6. To close a FP a report of arrival shall be made in person, by radiotelephony or via at the earliest possible moment after ... to the appropriate ATS unit at the arrival aerodrome.

VFR; during; a specified information; regarding; entry; intended; IFR; landing; receipt; portion; data link; submitted; cruising level; evident; provisions; crossing; necessary.

F. Retell the text using word combinations:

1. Flight Plan – a specified information - to provided - Air Traffic Service units.
2. to be relative - an intended flight - portion of a flight - an aircraft.
3. Flight Plan – to submit - at least sixty minutes before departure.
4. Flight plan – to submit during flight - at a time - the appropriate ATS unit – to receive - at least 10 min. before - the entry point - a control area or the point of crossing an airway.
5. to become evident - some changes in FP – to be necessary.
6. Request for such changes - to include information - change of cruising level - change of route-change from VFR to IFR in case of weather deterioration.
7. Subject to the provisions of the documentation applied - to report - as soon as practicable - the appropriate ATS unit.
8. Fuel endurance or total on board - to constitute significant changes - the FP and – must - to report.
9. To close a FP a report of arrival - to make - in person, by radiotelephony or via data link - the earliest possible moment after landing to the appropriate ATS unit at the arrival aerodrome.

G. What flight plan problems have you ever encountered in your work?

GROUND HANDLING

Ground Handling offers a full range of handling services to Carriers. This service includes:

- 5 provision of electrical power sources and air conditioning units, communication between the ground bridge and the cockpit of the aircraft, towing of the aircraft, provision of equipment for landing, disembarking of passengers, provision of a bridge mechanism for loading and unloading of containers, internal cleaning of cabins and external cleaning of the aircraft from frost, snow, and ice by means of heating machines and special de-icing liquids. Most big airports are equipped with modern de-icing equipment, which ensures the flight
- 10 safety, regardless of weather conditions. It also provides cleaning of sanitary-sewer and water-operated systems of the aircraft, refuel of hydraulic and gas systems of the aircraft, heating of the cockpit and cabin of the aircraft, refuelling of the aircraft.
- 15 For the provision of these types of services for 24 hours per day the airport needs to be supplied with engineers and technical specialists with certified qualifications; mechanical operators; and cleaning technicians equipped with electro-mechanical means and chemical fluids for cleaning and washing the aircraft.



EXERCISES

A. Form the phrases according to the text:

- | | |
|-----------------------------|-----------------------|
| 1. Ground | a. passengers |
| 2. Handling | b. conditioning units |
| 3. electrical power | c. cabins |
| 4. air | d. liquids |
| 5. ground | e. aircraft |
| 6. towing of | f. specialists |
| 7. disembarking of | g. qualifications |
| 8. loading and unloading of | h. sources |
| 9. internal cleaning of | i. machines |
| 10. external cleaning of | j. Handling |
| 11. heating | k. aircraft |
| 12. de-icing | l. bridge |
| 13. technical | m. containers |
| 14. certified | n. services |
| 15. electro-mechanical | o. means |

B. Make as many derivatives as you can:

example: Provision – provide

- | | |
|---|------------------------------|
| 1. towing – 1. ... | 11. operator – 1. ... 2. ... |
| 2. equipment – 1. ... | 12. wash – 1. ... |
| 3. landing – 1. ... | |
| 4. disembarking – 1. ... 2. ... 3. ... 4. ... | |
| 5. load – 1. ... 2. ... | |

6. heating – 1. ...
7. de-icing – 1. ...
8. regardless – 1. ...
9. refueling – 1. ... 2. ... 3. ...
10. certificate – 1. ...

C. For questions 1-17, read the text below and decide which answer, A,B,or C best fits each space. There is an example at the beginning (o).

GROUND HANDLING

Ground Handling offers a full **(0)** range of handling services to Carriers.

This service **(1)** ...:

provision of electrical power **(2)** ... and air conditioning **(3)** ..., communication between the ground bridge and the **(4)** ... of the aircraft, towing of the aircraft, provision of equipment for landing, **(5)** ... of passengers, provision of a **(6)** ... mechanism for loading and unloading of containers, internal cleaning of cabins and external cleaning of the aircraft from **(7)** ..., snow, and ice by means of **(8)** ... machines and special **(9)** ... liquids. Most big airports **(10)** ... with modern de-icing equipment, which ensures the flight safety, regardless of weather conditions. It also **(11)** ... cleaning of sanitary-sewer and water-operated systems of the aircraft, refuel of hydraulic and gas systems of the aircraft, heating of the cockpit and cabin of the aircraft, refuelling of the aircraft.

For the provision of these types of services for 24 hours per day the airport needs to be supplied with **(12)** ... and technical specialists **(13)** ... certified qualifications; **(14)** ... operators; and cleaning technicians equipped with electro-mechanical **(15)** ... and chemical **(16)** ... for cleaning and **(17)** ... the aircraft.

- | | | |
|------------------------|----------------|-----------------|
| 1. A range | B ability | C options |
| 2. A keeps | B observes | C includes |
| 3. A springs | B sources | C conditions |
| 4. A parts | B instruments | C units |
| 5. A cabin | B cockpit | C galley-pantry |
| 6. A disembarking | B unloading | C jumping |
| 7. A ark | B train | C bridge |
| 8. A leaves | B frost | C flowers |
| 9. A warm | B soft | C heating |
| 10. A deicing | B mineral | C tasty |
| 11. A are equipping | B are equipped | C must equip |
| 12. A providing | B provisions | C provides |
| 13. A flight engineers | B engineers | C engines |
| 14. A to | B for | C with |
| 15. A mechanic | B mechanized | C mechanical |
| 16. A instruments | B means | C provisions |
| 17. A water | B fluids | C juices |
| 18. A watering | B brushing | C washing |

D. Retell the text changing the underlined words:

Ground Handling – to offer - a full range of handling services - Carriers.

This service - to include – provide - of electrical power sources and air conditioning units, – communicate - between the ground bridge and the cockpit of the aircraft, – tow - of the aircraft, - provide - of equipment for landing, - disembark - of passengers, - provide - of a bridge mechanism for – load - and – unload - of containers, internal – clean - of cabins and external – clean - of the aircraft from frost, snow, and ice by means of heating machines and special de-icing liquids. Most big airports - to equip - with modern de-icing – equip-, which ensures the flight safety,- regard - of weather conditions. It also – to provide – clean - of sanitary-sewer and water-operated systems of the aircraft, - refuel- of hydraulic and gas systems of the aircraft, - heat- of the cockpit and cabin of the aircraft, - refuel - of the aircraft.

For the provision of these types of services for 24 hours per day the airport -to need- to be supplied with engineers and technical specialists with certified qualifications; mechanical operators; and cleaning technicians equipped with electro-mechanical means and chemical fluids for cleaning and –wash- the aircraft.

E. Retell the text using the following word combinations:

1. - a full range of handling services;
2. - provision of electrical power sources and air conditioning units - communication between the ground bridge and the cockpit - towing of the aircraft - equipment for landing - disembarking of passengers - bridge mechanism for loading and unloading of containers - internal cleaning of cabins and external cleaning of aircraft;
3. - big airports - modern de-icing equipment - flight safety;
4. - cleaning of sanitary-sewer and water-operated systems - refueling of ... - heating of ...;
5. - to be supplied with engineers and technical specialists - mechanical operators - cleaning technicians - equipped with electro-mechanical means - chemical fluids for ...;

F. Give some examples of Ground Handling in the airports of our country and abroad and compare.

EFFECTS OF WEATHER

Except perhaps for local or short flights, a pilot, before taking off, obtains a weather forecast, as weather conditions affect aircraft in flight. The meteorologist prepares a weather chart, which shows the current weather conditions over the whole country. This chart shows the areas of low pressure, to which the pilot should pay particular attention, the areas of high pressure, where precipitation is falling, and all other weather conditions across the country. From this weather map, the forecaster can advise pilots of the weather conditions they can expect to encounter during their flights. A high-pressure area usually means good weather, while a low-pressure area usually involves one or more fronts producing clouds, thunderstorm with lightning strikes, hail and statics, precipitation and turbulence over many hundreds of miles. Interference of stable air masses can produce clear air turbulence. From the chart the pilot will decide which route to fly and when. A pilot may decide to postpone the flight in thick fog or poor visibility. A pilot needs to know wind direction and speed. The headwind may delay the arrival of flights and is to be avoided. A tailwind can be of great advantage as it increases the ground speed and results in reduction of fuel consumption.



EXERCISES

A. Form the phrases according to the text:

- | | |
|---------------------------------|--|
| 1. local | a. attention |
| 2. clear air | b. consumption |
| 3. weather | c. weather conditions |
| 4. current | d. advantage |
| 5. pay | e. fronts |
| 6. to encounter | f. flight |
| 7. a low-pressure area involves | g. charts |
| 8. to postpone | h. thunderstorm with lightning strikes |
| 9. to be of great | i. turbulence |
| 10. fuel | j. flights |

B. Make nouns from the following words:

1. meteorology; 2. forecast; 3. decide 4. know 5. arrive 6. pay 7. interfere 8. avoid

C. What do we call the following?

- | | |
|---|-----------------------|
| 1. Only a short distance away from a person, thing or place | a. postpone |
| 2. A description of what the weather will probably be like in the near future, provided by radio, television, or newspapers | b. produce |
| 3. The weather at a particular time, especially when considering how this will affect an event or activity that has been planned, such as journey or flight | c. consumption |
| 4. To make someone take part in something, especially by encouraging them to do this | d. local |
| 5. To make a choice that you are going to do something | e. weather forecast |
| 6. To arrange to do something at a later time, especially because it is not possible to do it at the time that was planned | f. increase |
| 7. Something that helps you to be in a better position than other people, more likely to succeed | g. involve |
| 8. The amount of something that is used, such as food, gas, electricity, or water | h. weather conditions |
| 9. To make something | i. advantage |
| 10. To become larger in number, amount, cost etc | j. decide |

D. Insert the correct words:

Except perhaps for local or ... flights, a pilot, before ... , obtains a weather forecast, as weather conditions ... aircraft in flight. The meteorologist ... a weather chart, which shows the ... weather conditions over the whole This chart shows the areas of low ... , to which the pilot should pay particular ... , the areas of ... pressure, where precipitation is ... , and all other weather conditions across the country. From this weather map, the forecaster can ... pilots of the weather conditions they can expect to ... during their flights. A high-pressure area usually means ... weather, while a low-pressure area usually ... one or more ... producing clouds, thunderstorm with ... , hail and statics, precipitation and ... over many hundreds of Interference of stable air masses can ... clear air turbulence. From the chart the pilot will decide which route to fly and A pilot may decide to ... the flight in thick fog or poor A pilot needs to know wind ... and speed. The headwind may delay the arrival of flights and is to be A ... can be of great ... as it increases the ground speed and results in reduction of fuel

1. turbulence 2. country 3. visibility 4. advantage 5. pressure 6. avoided 7. affect 8. short 9. direction 10. current 11. taking off 12. postpone 13. prepares 14. lightning strikes 15. advice 16. fronts 17. tailwind 18. consumption 19. high 20. miles 21. when 22. falling 23. involves 24. produce 25. good 26. to encounter 27. attention

E. Retell the text using word combinations:

1. - local or short flights - to obtain a weather forecast – weather conditions – to affect aircraft in flight;
2. – to prepare weather chart – to show the current weather conditions;
3. – to show the areas of low pressure – to pay particular attention – areas of high pressure – precipitation – weather conditions across the country;
4. – the forecaster – to advice pilots – to encounter during the flight;
5. – a high-pressure area – to mean – good weather – a low-pressure area – to involve fronts – to produce clouds, thunderstorm, hail and statics;
6. – interference of stable air masses – to produce – clear air turbulence;
7. – the chart – to decide – which route to fly and when;

8. – to decide – to postpone the flight;
9. – to know wind direction and speed;
10. – the headwind – to delay – the arrival;
11. – a tailwind – to be of great advantage – to increase the ground speed – to result – reduction of fuel consumption;

F. Give your examples of bad weather conditions and how they may affect the flight of aircraft.

DE-ICING

De-icing is a very important process for the safety of flight to cope with the adverse effect of altitudes and weather. Most de-icing treatments are performed in so-called remote areas, located near the RW ends. A supply base for de-icing fluids on the RW end guarantees quick refueling of the vehicles. Aircraft are only guided to the de-icing areas by ATC if subsequent take-off is confirmed, and de-icing treatments are performed with engines running. This ensures that holdover times are minimized, as aircraft take off only a few minutes after de-icing. As a consequence the probability of delays is minimized. All types of fluids are collected, cleaned by mechanical and chemical means, evaporated and reformulated. Up to 60 % of the used fluids is reclaimed by the aircraft de-icing system. The positive ecological effects of this method are evident. De-icing operators are part of a unique network – airlines, ATC, winter service and other airport service facilities are integrated in the development and control of processes. De-icing movements areas and aircraft de-icing are harmonized; information is distributed in line with requirements. This leads to safer aviation operations with a high take-off frequency even under adverse weather conditions.



EXERCISES

A. Give the words with the similar meaning:

- | | | |
|---------------|----------------|--------------------------------|
| 1. to cope | 6. vehicles | 11. to collect |
| 2. adverse | 7. quick | 12. Airport service facilities |
| 3. to perform | 8. to guide | 13. to distribute |
| 4. remote | 9. subsequent | 14. requests |
| 5. fluid | 10. to confirm | 15. aviation operations |

B. Give the words with the opposite meaning:

- | | |
|--------------|-----------------|
| 1. remote | 6. after |
| 2. RW end | 7. positive |
| 3. quick | 8. to integrate |
| 4. refueling | 9. under |
| 5. minimum | 10. adverse |

C. Form the phrases according to the text:

- | | |
|-------------------|----------------------------------|
| 1. the safety of | a. treatments |
| 2. to cope with | b. mechanical and chemical means |
| 3. de-icing | c. times |
| 4. subsequent | d. effects |
| 5. holdover | e. flight |
| 6. probability of | f. network |

- | | |
|----------------------------|------------------------|
| 7. cleaned by | g. the adverse weather |
| 8. The positive ecological | h. delays |
| 9. part of a unique | i. facilities |
| 10. airport service | j. take-off |

D. Fill in the gaps with the appropriate word or word combination:

De-icing is a very important process for the safety of flight to (1) ... with the (2) ... of altitudes and weather. Most de-icing (3) ... are performed in so-called (4) ... areas, located near the RW ends. A (5) ... base for de-icing fluids on the RW end guarantees (6) ... refueling of the vehicles. Aircraft are only guided to the (7) ... by ATC if subsequent take-off is (8) ... , and de-icing treatments are (9) ... with engines running. This ensures that (10) ... are minimized, as aircraft take off only a few minutes after (11) As a (12) ... the probability of delays is (13) All types of fluids are (14) ... , cleaned by mechanical and (15) ... means, (16) ... and reformulated. Up to 60 % of the used fluids is reclaimed by the aircraft de-icing system. The positive (17) ... effects of this method are evident. De-icing operators are part of a unique network – airlines, ATC, winter service and other (18) ... are integrated in the development and control of processes. De-icing movements areas and aircraft de-icing are (19) ... ; information is (20) ... in line with requirements. This leads to (21) ... with a high take-off frequency even under adverse weather conditions.

- | | | | |
|-------------------------------|------------------------------|-------------------|--------------|
| a. evaporated | g. safer aviation operations | m. quick | s. de-icing |
| b. performed | h. treatments | n. ecological | t. remote |
| c. airport service facilities | i. harmonised | o. supply | u. confirmed |
| d. holdover times | j. collected | p. distributed | |
| e. de-icing areas | k. chemical | q. adverse effect | |
| f. consequence | l. cope | r. minimised | |

E. Retell the text using the word combinations:

1. - de-icing - important process - the safety of flight - to cope with the adverse effect;
2. -most de-icing treatments - to perform - remote areas - near the RW ends;
3. -a supply base - de-icing fluids – to guarantee quick refueling of the vehicles;
4. -aircraft - to guide to the de-icing areas – to confirm subsequent take-off - de-icing treatments - to perform - with engines running.
5. – to minimize holdover times - aircraft take off only a few minutes after de-icing;
6. - to minimize the probability of delays;
7. - to collect fluids - to clean by mechanical and chemical means, evaporate and reformulate;
8. - to reclaim fluids - the aircraft de-icing system;
9. - the positive ecological effects – to be evident;
10. - to be part of a unique network – airlines, ATC, winter service and other airport service facilities - to integrate in the development and control of processes;
11. - de-icing movements areas and aircraft de-icing – to be harmonized; information – to be distributed in line with requirements;
12. - safer aviation operations - a high take-off frequency - adverse weather conditions.

F. Describe your own experience of de-icing procedure.

AIRPORT SECURITY

Ensuring the safety of passengers and aircraft is the major concern at airports. Security personnel operate metal detectors and X-ray machines that screen baggage for possible weapons or illegal substances. Many areas of the airport, especially those that contain critical equipment, are protected by security personnel and are off-limits to the public.

In the wake of the September 11, 2001, terrorist attacks in the United States, airport security became the responsibility of the government. The new law was developed and expanded the number of baggage screeners, imposed standards for their training, and made them federal employees for the interim period of time. Beginning in January 2002, it required that all passenger luggage, including checked luggage, be screened. By the end of 2002, all checked luggage was to be put through special explosives-detecting devices. All passengers must go through checking procedure and can be asked for thorough personal inspection. Security on board was also promoted by installing reinforced doors in cockpits to prevent from unlawful interference. All items that can provoke danger (sharp, flammable and so on) are prohibited in passenger cabin.



EXERCISES

A. Insert the appropriate words:

Ensuring (1) ... of passengers and aircraft is the major (2) ... at airports. Security personnel operate (3) ... detectors and (4) ... that screen baggage for possible (5) ... or illegal substances. Many areas of the airport, especially those that contain critical (6) ... , are protected by security (7) ... and are off-limits to the public.

In the wake of the September 11, 2001, (8) ... attacks in the United States, airport security became (9) ... of the government. The new law was (10) ... and expanded the number of (11) ... , imposed standards for their training, and made them federal (12) ... for the (13) ... period of time. Beginning in January 2002, it required that all passenger (14) ... , including checked luggage, be screened. By the end of 2002, all checked luggage was to be put through special (15) ... devices. All passengers must go through checking (16) ... and can be asked for (17) ... personal inspection. Security on board was also promoted by installing (18) ... doors in cockpits to prevent from (19) ... interference. All items that can (20) ... danger (sharp, flammable and so on) are (21) ... in passenger cabin.

- | | | | |
|-----------------------|--------------|----------------------|-------------------------|
| a. metal | g. equipment | l. the safety | q. procedure |
| b. weapons | h. concern | m. baggage screeners | r. thorough |
| c. the responsibility | i. employees | n. X-ray machines | s. prohibited |
| d. terrorist | j. personnel | o. developed | t. explosives-detecting |
| e. interim | k. luggage | p. reinforced | u. provoke |
| f. unlawful | | | |

B. What do we call the following?

- | | |
|--|---------------|
| 1. Freedom from harm or danger, especially from the danger of being robbed, killed, or attacked. | a. interim |
| 2. A feeling of worry about a situation such as social problem, or about someone's health, safety etc. | b. promote |
| 3. As consequence of circumstances | c. provoke |
| 4. To become larger in number, amount, cost etc. | d. install |
| 5. Force somebody to do something | e. device |
| 6. All the people who work in a company, organization, or country. | f. concern |
| 7. Something that lasts or exists for only a limited period of time | g. flammable |
| 8. Some facility, instruments or equipment. | h. reinforced |
| 9. To carefully arrange the way something happens, so that you get the result that you want. | i. expand |
| 10 To put a piece of equipment into a place or position so that it is ready to be used. | j. employees |
| 11 Something that is strong, will last a long time, and will not break easily. | k. the wake |
| 12 To make something happen, especially something unpleasant. | l. security |
| 13 A technical British word meaning able or likely to burn very easily, and possibly dangerous. | m. impose |

C. Retell the text using word combinations:

1. - ensuring the safety of passengers and aircraft - to be the major concern;
2. - to operate metal detectors and X-ray machines - to screen baggage for - weapons or illegal substances;
3. - areas of the airport - to contain critical equipment to be protected by security personnel – to be off-limits to the public;
4. - in the wake of - airport security - to become the responsibility of ;
5. – to develop the new law - to expand the number of baggage screeners – to impose standards for their training - to make them federal employees - the interim period of time;
6. - beginning in January 2002 - all passenger luggage - including checked luggage – to be screened;
7. - by the end of 2002 - all checked luggage – to be to -to be put - special explosives-detecting devices;
8. - all passengers – must - to go through - checking procedure - can - to be asked for - thorough personal inspection;
9. - security on board – to be promoted by - to install reinforced doors - to prevent from;
10. - all items - to provoke danger (sharp, flammable and so on) – to be prohibited in passenger cabin;

D. Give your examples of airport security at any airport; what is the security procedure for the crew?

BIRD SCARING

When a pilot is told by the ATC that he is ‘clear to take off, or land’ the Controller is making a statement that the RW is clear of objects, which could interfere with the safe take-off, and landing of his aircraft, such as debris or birds. Debris on the RW can cause catastrophic



- 5 damage to an aircraft as well as birds. Birds on an airfield should be applied the same effort to their detection and removal. Airports are necessary large, flat and open areas and detection distances of well over a kilometre are not unusual.
- 10 An Integrated Bird Management System is designed to reduce the attractions for birds on an airport and then to disperse those birds that persist by bio-acoustic and other means. Others in the business of contributing to the implementation of an overall airport safety policy are Land and Grass management, Lighting and signage, Foreign Object Debris detection, Surface Friction Testing.
- 15 Integrated Management System has been proven to be effective in reducing the risk of damage from birdstrikes. Part of that system is Scarecrow Bio-acoustic System, which demonstrates a good rate of dispersal. It can be seen to reduce the number of high-risk species (such as Gulls, Corvine, Lapwing, and Starling) on airports and thus improve
- 20 chances of Birdstrike Avoidance.

EXERCISES

A. Form the phrases according to the text:

- | | |
|---|-------------------------------------|
| 1. to make | a. damage |
| 2. to be clear of | b. the attractions for birds |
| 3. to interfere with | c. birds |
| 4. to cause catastrophic | d. management |
| 5. should be applied the same effort to | e. detection |
| 6. to disperse | f. a statement |
| 7. to reduce | g. the safe take-off |
| 8. the implementation of | h. damage |
| 9. Land and Grass | i. birds detection and removal |
| 10. Foreign Object Debris | j. an overall airport safety policy |
| 11. to reduce the risk of | k. objects |

B. Insert the appropriate words:

When a pilot is told by the (1) ... that he is ‘clear to take off, or land’ the Controller is making a statement that the RW is clear of (2) ... , which could (3) ... with the safe take-off, and landing of his aircraft, such as (4) ... or birds. Debris on the RW can (5) ... catastrophic damage to an aircraft as well as birds. (6) ... on an airfield should be applied the same effort to their (7) ... and removal. Airports are necessary large, (8) ... and open areas and detection distances of well over a (9) ... are not unusual. An Integrated Bird Management (10) ... is designed to (11) ... the attractions for birds on an airport and

then to disperse those birds that persist by bio-acoustic and other (12) Others in the business of contributing to the (13) ... of an overall airport safety policy are Land and Grass management, Lightning and signage, Foreign Object Debris detection, Surface Friction Testing. Integrated Management System has been proven to be effective in reducing the risk of damage from (14) Part of that system is Scarecrow Bio-acoustic System which demonstrates a good (15) ... of dispersal. It can be seen to reduce the (16) ... of high-risk species (such as Gulls, Corvine, Lapwing, and Starling) on airports and thus improve chances of Birdstrike Avoidance.

- | | | | | | | |
|-----|---|-------------|---|----------------|---|---------------|
| 1. | A | ATC | B | FIR | C | ILS |
| 2. | A | documents | B | employee | C | objects |
| 3. | A | prove | B | promote | C | interfere |
| 4. | A | debris | B | thieves | C | pundits |
| 5. | A | appreciate | B | disperse | C | cause |
| 6. | A | staff | B | spy | C | birds |
| 7. | A | detection | B | support | C | deception |
| 8. | A | sloppy | B | mountainous | C | flat |
| 9. | A | kilometre | B | 10 kilometres | C | 10 000 metres |
| 10. | A | Authority | B | System | C | Society |
| 11. | A | increase | B | reduce | C | observe |
| 12. | A | instruments | B | means | C | provisions |
| 13. | A | observation | B | implementation | C | composition |
| 14. | A | hijacking | B | fire fighting | C | birdstrikes |
| 15. | A | opinion | B | rate | C | view |
| 16. | A | number | B | quality | C | appearance |

C. Retell the text using word combinations:

1. - a pilot – to be told by - ‘clear to take off, or land’ - to make a statement - the RW – to be clear of - to interfere with - the safe take-off and landing - debris or birds;
2. – debris - can - to cause - catastrophic damage - as well as;
3. – birds - should - to be applied the same effort - detection and removal;
4. - airports - large, flat and open areas - detection distances - a kilometre – to be (not) unusual;
5. - an Integrated Bird Management System – to be designed - to reduce the attractions for birds - to disperse - by bio-acoustic and other means;
6. - others in the business of contributing - the implementation of - an airport safety policy – to be - Land and Grass management, Lightning and signage, Foreign Object Debris detection, Surface Friction Testing;
7. -Integrated Management System - to prove - to be effective in - to reduce - the risk of damage - birdstrikes;
8. - part of that system – to be Scarecrow Bio-acoustic System - to demonstrate - a good rate – dispersal;
9. -it can be seen - to reduce the number - high-risk species (such as Gulls, Corvine, Lapwing, and Starling) on airports and thus – to improve chances - Birdstrike Avoidance;

D. Give the examples of bird scaring methods at Mineralnye Vody airport. How is this problem solved in other airports?

AIRPORT

- Airport is a transportation center used for the landing and takeoff of aircraft. Airports provide transportation or transfer not only for people but also for freight, such as mail, perishable food and other important items. In order to accomplish this transfer as efficiently and as safely as possible, airport operations are grouped into four general areas: aircraft service, passenger and freight service, support service, and airport security. Aircraft service focus on the flight, maintenance and refueling of aircraft at the airport, as well as on air traffic control around the airport. Passenger services are centered in the terminal building, where the passengers purchase tickets, load and retrieve baggage, and enter and exit aircraft. Terminals are designed in variety of ways depending on the needs and size of a given airport. Airports also provide many support services indirectly related to air travel, such as restaurants, shops, parking, and aircraft emergency services. Finally, airport security involves ensuring the safety of passengers and aircraft by screening passengers and their luggage for weapons and explosives. Airports are so important economically that many companies will not locate factories or offices in cities that do not have an adequate airport.



EXERCISES

A. Form the phrases according to the text:

- | | |
|-----------------------------------|--|
| 1. provide | a. transfer not only for people but also for freight |
| 2. transfer | b. tickets |
| 3. to accomplish | c. needs and size of airport |
| 4. airport operations are grouped | d. transportation |
| 5. passengers purchase | e. many support services |
| 6. load and retrieve | f. involves ensuring the safety of passengers |
| 7. to be designed depending on | g. mail, perishable foods |
| 8. airports provide | h. into four general areas |
| 9. airport security | i. baggage |
| 10. to screen luggage for | j. factories or offices |
| 11. companies locate | k. weapons and explosives |

B. Explain the words in English:

1. freight 2. efficiently 3. to group 4. refueling 5. terminal building 6. to purchase 7. luggage

C. Distribute words and phrases into different columns:

Fright	Airport operations	Aircraft service	Designation of passenger services	Support services	Airport security

1. Aircraft service; 2. Flight; 3. Mail; 4. Passenger and freight service; 5. Purchase tickets; 6. Restaurants; 7. Enter and exit aircraft; 8. Perishable foods; 9. Support service; 10. Maintenance and refueling of aircraft; 11. Shops; 12. Screening passengers; 13. Airport security; 14. Air traffic control; 15. Parking; 16. Load and retrieve baggage; 17. Aircraft emergency services; 18. Screening luggage; 19. Weapons and explosives.

D. Fill in the correct word:

1. Airport is a transportation ... used for the landing and takeoff of aircraft.
2. Airports provide transportation or transfer not only for people but also for freight, such as mail, perishable foods and other
3. accomplish this transfer as efficiently and as safely as possible, airport operations are grouped into four general areas: aircraft service, passenger and freight service, support service, and airport security.
4. Aircraft service focus on the flight, maintenance and refueling of aircraft at the airport, on air traffic control around the airport.
5. Passenger services are centered in the terminal building, where the passengers ... tickets, load and retrieve baggage, and enter and exit aircraft.
6. Terminals are designed in variety of ways ... the needs and size of a given airport.
7. Airports also provide many support services ... to air travel, such as restaurants, shops, parking, and aircraft emergency services.
8. Finally, airport security ... ensuring the safety of passengers and aircraft by screening passengers and their luggage for weapons and explosives.
9. Airports are so important economically that many companies will not locate ... in cities that do not have an adequate airport.

center **factories and offices** **important items** **involves** **in order to**
indirectly related **as well as** **depending on** **purchase**

E. Fill in the correct form of the verb:

1. Airport ... for the landing and takeoff of aircraft. (to use)
2. Airport operations ... into four general areas: aircraft service, passenger and freight service, support service and airport security. (to group)
3. Passenger services ... in the terminal building. (to center)
4. Terminals ... in variety of ways depending on the needs and size of a given airport. (to design)
5. Passengers and their luggage ... for weapons and explosives. (to screen)

F. Retell the text using word combinations:

Transportation center;
Provide transportation;
Transfer freight, such as mail, perishable foods and other important items;
In order to accomplish transfer efficiently;
To be grouped into four general areas;
To focus on the flight, maintenance and refueling of the aircraft, air traffic control;
To be centered in the terminal building;
To purchase tickets;
To load and retrieve baggage;
To enter and exit aircraft;
To be designed in variety of ways;
To depend on the needs and size;
To provide support services;
To be related to air travel;
To involve ensuring the safety of passengers and aircraft;
To screen passengers and their baggage for weapons and explosives;
To be important economically;
To locate factories or offices;
An adequate airport.

G. Describe any airport. Can you name the main differences and similarities between the airports?

B. Find an extra word in each line:

1	Dangerous goods are articles or substances which are to capable of posing	1	
2	a significant risk of health, safety or property when that transported by air and	2	
3	which are being classified according to the IATA Dangerous Goods regulation.	3	
4	Dangerous goods may to be divided into	4	
5	- those which are the acceptable for transport provided all the regulations,	5	
6	- those which are forbidden for transport under by any circumstances,	6	
7	- those which are forbidden for transport unless exempted by the rules of concerned.	7	
8	Disabling devices such as mace, pepper spray, scents etc. containing an irritant	8	
9	or incapacitating substance are prohibited on the person, in checked favorite and carry-on luggage.	9	
10	The list of DG includes the names, surnames, the quantities and the packaging. In	10	
11	case of emergency it must to be known either any DGs are available on	11	
12	the board the plane in order not to worsen the situation. DGs are divided into	12	
13	9 classes reflecting the type of risk involved. Pilot –in- command is to aware	13	
14	of the DG available on board his the plane having filled in the special form. It	14	
15	includes the proper shipping name, the class or division and of risk	15	
16	corresponding to the label, for non-radioactive material, quality, the quantity,	16	
17	weight and location, for radioactive- their its category, numbers of packages	17	
18	and location, the destination of cargo. Each package is to labeled with a	18	
19	special red hatched label. In the event of leakage the cabin and flight deck it may become flammable, irritating or toxic.	19	

C. Form the phrases according to the text:

- | | |
|----------------------------------|-------------------------------|
| 1. Dangerous | A. transport |
| 2. risk of | B. The situation |
| 3. forbidden for | C. labeled |
| 4. Disabling | D. spray |
| 5. an irritant or incapacitating | E. goods |
| 6. In case of | F. devices |
| 7. DGs are divided into | G. substance |
| 8. Each package is | H. leakage |
| 9. In the event of | I. health, safety or property |
| 10. in order not to worsen | J. 9 classes |
| 11. pepper | K. emergency |

D. Retell the text using word combinations:

Dangerous goods - articles or substances - posing - significant risk- health - safety – property - transported – be classified

Dangerous goods - be divided into - acceptable for - forbidden - under any circumstances – forbidden -unless exempted

Disabling devices- mace - pepper spray - an irritant or incapacitating substance - be prohibited on

The list of DG – to include

In case of - be known - be available - not to worsen - the situation

DGs – be divided into - 9 classes - type of risk

Pilot –in- command – be aware of – to fill in - the special form

To include - for non-radioactive – for radioactive

Each package- be labeled with

In the event of - leakage - to become flammable – irritating – toxic

E. Why should a pilot pay special attention to Dangerous Goods?

ACTIONS TAKEN AFTER THE RAMP INSPECTIONS

Based on the category, number and nature of the findings, several actions may be taken.

If the findings indicate that the safety of the aircraft and its occupants is impaired, corrective actions will be required. Normally the aircraft captain will be asked to address the serious deficiencies, which are brought to his attention. In rare cases, where inspectors have reason to believe that the aircraft captain does not intend to take the necessary measures on the deficiencies reported to him, they will formally ground the aircraft. The formal act of grounding by the State of Inspection means that the aircraft is banned from further flights until appropriate corrective measures are taken.

In 2006, the following examples of events led to the grounding of aircraft: no valid Certificate of Airworthiness onboard, no MEL onboard but aircraft had outstanding technical deficiencies, very poor technical condition of the aircraft, no maintenance release issued, heavy corrosion, no emergency lights to indicate emergency exits, improper repairs, heavy leakage, improper cargo loading, no up-to-date navigation documentation, and tyres worn out beyond limits. Another type of action is called “corrective actions before flight authorized”. Before the aircraft is allowed to resume its flight, corrective action is required to rectify any deficiencies, which have been identified. In other case an aircraft may depart under operational restrictions.

A. Form the phrases according to the text:

- | | |
|---------------------------|-----------------------------|
| 1. actions | a. worn out beyond limits |
| 2. safety of the aircraft | b. attention |
| 3. corrective actions | c. identified deficiencies |
| 4. serious | d. operational restrictions |
| 5. to bring to | e. is impaired |
| 6. to ground | f. before flight authorised |
| 7. to take appropriate | g. corrosion; leakage |
| 8. to be banned | h. will be required |
| 9. heavy | i. corrective measures |
| 10. improper | j. repairs; cargo loading |
| 11. tyres | k. the aircraft |
| 12. corrective actions | l. from further flights |
| 13. to rectify | m. may be taken |
| 14. to depart under | n. deficiencies |

B. Explain the following phrases in English:

1. to be banned from further flights
2. the safety is impaired
3. to require corrective actions
4. to address the serious deficiencies
5. to ground the aircraft
6. to take corrective measures
7. outstanding technical deficiencies
8. improper cargo loading
9. to rectify any deficiencies

C. Find an extra word(s) in each sentence:

- 1) Based on the category, number and nature of the findings, several actions may have be taken.
- 2) If the findings indicate that what the safety of the aircraft and its occupants is impaired, corrective actions will be required.

- 3) Normally the aircraft captain will be asked to address the serious deficiencies which are brought to his the attention.
- 4) In rare cases, where inspectors have reason to believe that the aircraft captain does not intend to take the necessary measures on the deficiencies reported to him, they will be formally ground the aircraft.
- 5) The formal act of grounding by the State of Inspection means that the aircraft is been banned from further flights until appropriate corrective measures are taken.
- 6) In 2006, the following examples of events led to the grounding of aircraft: no does valid Certificate of Airworthiness onboard, no MEL onboard but aircraft had been outstanding technical deficiencies, very poor technical condition of the aircraft, no maintenance release issued, heavy corrosion, no emergency lights to indicate emergency exits, improper repairs, heavy leakage, improper cargo loading, no up-to-date navigation documentation, and tyres worn out beyond limits.
- 7) Another type of action is did called “corrective actions before flight authorised”.
- 8) Before the aircraft to is allowed to resume it’s flight, corrective action is required to rectify any deficiencies which have been identified.
- 9) In other case an aircraft may depart under behind operational restrictions.

D. Retell the text using the key-words:

- 1) Based on - the category, number and nature - the findings - take actions
- 2) If - the safety - be impaired - corrective actions - require
- 3) captain - to ask - serious deficiencies – to bring to one’s attention
- 4) In rare cases - inspectors - to believe - the aircraft captain – not intend - to take the necessary measures on - to ground the aircraft
- 5) to mean - that – to be banned from - until appropriate corrective measures- to take
- 6) some events – to lead to - grounding - no valid Certificate of Airworthiness onboard - ... MEL onboard – to have outstanding technical deficiencies ...- poor technical condition - ... maintenance release issued, ... corrosion, ... emergency lights to indicate , improper repairs, ... leakage, ... cargo loading, ... up-to-date navigation documentation, and tyres worn out
- 7) Another type of action - to call - “corrective actions before flight authorised”.
- 8) Before - the aircraft – to be allowed - to resume it’s flight, corrective action – to be required to - any deficiencies which – to be identified.
- 9) In other case – may – to depart - operational restrictions.

E. Have you ever taken part in the ramp inspection? Describe the procedure of ramp inspection.

FUEL LEAK

One of the most frequent problems that can appear and cause an accident is a problem with fuel on board. This can lead to shortage, exhaustion or leakage. Lets look at one of such problematic examples, where only fortune and attention as well as assistance of other pilots helped to escape fatality. This incident occurred to BA Boeing 777 that spewed fuel from an uncovered fuel tank aperture inside the left main gear wheel well. This happened during take-off at Heathrow airport. Immediately after take-off another aircraft at the holding point reported a trail of smoke from the rear of 777. A smell of fuel vapour was also reported. The BA crew decided to dump fuel and return to base/ they correctly deduced there was a fuel leak from the centre-wing fuel tank. The crew landed with minimal breaking. Emergency services were in attendance to reduce the chance of fire. There were no injuries to the 15 crew and 151 passengers. The mistake that caused the incident occurred during a check at heavy maintenance base when the centre-wing fuel tank was being checked only internally.

A. Find the odd word in each line:

- | | | | | | |
|-------------|------------|-----------|------------|--------|------|
| 1) spew | leak | dump | draw | spill | pour |
| 2) occur | happen | encounter | take place | | |
| 3) deduce | comprehend | conclude | decide | | |
| 4) help | attend | assist | affect | | |
| 5) trauma | wound | heat | injury | bruise | |
| 6) aperture | solution | chink | slit | crack | |

B. Make questions with ‘wh-‘ words to the words in bold:

- 1) One of the most frequent problems is **a problem with fuel on board**.
- 2) This can lead to **shortage, exhaustion or leakage**.
- 3) **Only fortune, attention and assistance** of other pilots helped to escape fatality.
- 4) This incident occurred **to BA Boeing 777**.
- 5) Fuel was spewed **from an uncovered fuel tank aperture** inside the left main gear wheel well.
- 6) This happened **during take-off at Heathrow airport**.
- 7) Immediately after take-off another aircraft at the holding point reported **a trail of smoke from the rear of 777**.
- 8) A smell **of fuel vapour** was also reported.
- 9) The BA crew decided **to dump fuel and return to base**.
- 10) They correctly deduced there was a fuel leak from **the centre-wing fuel tank**.
- 11) **The crew** landed with minimal breaking.
- 12) Emergency services were in attendance **to reduce the chance of fire**.
- 13) There were no **injuries** to the 15 crew and 151 passengers.
- 14) The mistake occurred **during a check** at heavy maintenance base.
- 15) The centre-wing fuel tank was being checked **only internally**.

C. Choose the appropriate word:

One of the most (1) ... problems that can (2) ... and cause an accident is a problem with fuel on board. This can lead to shortage, (3) ... or leakage. Lets look at one of such (4) ... examples, where only fortune and (5) ... as well as assistance of other pilots helped to escape (6) This incident occurred to BA Boeing 777 that (7) ... fuel from an uncovered fuel tank (8) ... inside the left main gear wheel (9) This happened (10) ... take-off at Heathrow airport. Immediately after take-off another aircraft at the holding point reported a (11) ... of smoke from the rear of 777. A smell of fuel (12) ... was also reported. The BA crew decided to dump fuel and return to base/

they correctly (13) ... there was a fuel leak from the centre-wing fuel tank. The crew landed with minimal breaking. Emergency services were (14) ... to reduce the chance of fire. There were no (15) ... to the 15 crew and 151 passengers. The mistake that caused the incident occurred during a check at heavy maintenance base when the centre-wing fuel tank was being checked only (16) ...

- | | | | | | | |
|-----|---|---------------|---|-------------|---|-----------------|
| 1. | A | Rear | B | Frequent | C | Funny |
| 2. | A | Assist | B | Provide | C | Appear |
| 3. | A | Exhaustion | B | Execution | C | Extinguishing |
| 4. | A | Annoying | B | Problematic | C | Bothering |
| 5. | A | Acquisition | B | Ambition | C | Attention |
| 6. | A | Damage | B | Fatality | C | Fortune |
| 7. | A | Jettisoned | B | Spewed | C | Lost |
| 8. | A | Aperture | B | Amateur | C | Adventure |
| 9. | A | Wall | B | Well | C | While |
| 10. | A | For | B | In | C | During |
| 11. | A | Shade | B | Trail | C | Smell |
| 12. | A | Vapour | B | Discovery | C | Exploration |
| 13. | A | Guessed | B | Deduced | C | Understood |
| 14. | A | in attendance | B | at a loss | C | in a difficulty |
| 15. | A | Injuries | B | Damages | C | Punctures |
| 16. | A | Internally | B | Externally | C | In part |

D. Retell the text using word combinations:

- 1) One of the most frequent - appear and cause an accident - a problem with - on board.
- 2) This - to lead to ..., ... and
- 3) Lets look at one of such - only fortune and attention -as well as - ... pilots - helped to- escape
- 4) This incident – to occur to - that – to spew - from an uncovered fuel tank ... - inside the left main gear wheel
- 5) This happened during ... at
- 6) Immediately after - another aircraft at - to report- a trail of smoke from - .
- 7) A smell of - vapour – to be also reported.
- 8) The BA crew – to decide - fuel - to return to base/ they correctly –to deduce - a fuel leak from - tank.
- 9) The crew – to land - minimal breaking.
- 10) Emergency services – to be in attendance - to reduce -the chance of fire.
- 11) There are- injuries to the
- 12) The mistake – to cause the incident - to occur - during a check - heavy maintenance base - the centre-wing fuel tank – to be checked only internally.

E. Give the example of fuel problem on board. Describe any possible situation connected with fuel.

AIRPORT GROUND SERVICES AND FACILITIES

The primary requirements of the aircraft at an airport is an adequate runway. Airport RWs are arranged to permit the maximum number of safe take-offs and landings in all weather conditions. RW designs at airports differ according to the type of aircraft the RW serves, the prevailing wind direction and speed and the availability of land. Environmental factors such as nearby wild life or obstructions to navigation such as mountains must also be considered when building runways.

Many airports have more than one RW. Parallel RWs at civilian airports must be separated by at least 1300m. If close, landings and take-off must be staggered to ensure that a safe degree of separation exists between aircraft during flight. Good design practices require each RW to have parallel TWs. Taxiways are short paths to connect the RWs to an area called the apron, which surrounds the terminal gates. To aid in night landings and increase visibility in foul weather, RWs are lit with white edge lights and TWs are lined with blue edge lights.

The control tower is a structure located at or near the terminal. It manages all air traffic at the airports. The tower is centrally located and elevated so that an unobstructed view of the airport can be maintained from tower at all times. At larger airports, smaller additional towers are staffed by airline employees, who control the ground operations of the airlines they work for. The airline tower staff manages the flow of ground vehicles and aircraft in the immediate vicinity of the terminal building. It also co-ordinates baggage, fuel and food services. Fuel is normally stored in large tanks above ground and transported to aircraft either by underground pumping facilities or by refuelling trucks. Repair facilities range from small facilities housed in a single hangar to large complexes that employ thousands of trained maintenance technicians.

A. Form the phrases according to the text:

- | | |
|----------------------------|------------------------------------|
| 1. primary | a. life |
| 2. environmental | b. wind direction |
| 3. safe degree | c. weather |
| 4. landings and take-offs | d. requirements |
| 5. to aid in | e. airline employees |
| 6. the prevailing | f. ground vehicles and aircraft |
| 7. to manage the flow of | g. must be staggered |
| 8. foul | h. factors |
| 9. wild | i. of separation |
| 10. to be staffed by | j. night landings |
| 11. underground | k. trained maintenance technicians |
| 12. to employ thousands of | l. pumping facilities |

B. Explain the words in English:

1. an adequate RW
2. environmental factors
3. wild life
4. foul weather
5. to manage the flow of ground vehicles and aircraft
6. to co-ordinate baggage, fuel and food services

Choose from the list given below the best phrase to fill each of the numbered spaces.

The primary requirements of the aircraft at an airport is (1)... . Airport RWs are arranged to permit the maximum number of (2)... . RW designs at airports differ according to (3)... and the availability of land. Environmental factors such as (4)... must also be considered when building runways. Many airports have (5)... . Parallel RWs at civilian airports must be (6)... . If close, landings and take-off must be staggered to ensure that (7)... during flight. Good design practices require each RW (8)... . Taxiways are short paths to connect the RWs to an area called the apron, (9)... . To aid in night landings and increase visibility in foul weather, (10)... and TWs are lined with blue edge lights. The control tower is a structure (11)... . It managers all air traffic at the airports. The tower is centrally located and elevated so that (12)... from tower at all times. At larger airports, smaller additional towers are staffed by airline employees, (13)... they work for. The airline tower staff manages the flow of ground vehicles and aircraft (14)... . It also co-ordinates (15)... . Fuel is normally stored in large tanks above ground and transported to (16)... . Repair facilities range from small facilities housed (17)... that employ thousands of trained maintenance technicians.

- A. more than one RW
- B. RWs are lit with white edge lights
- C. to have parallel TW
- D. the type of aircraft the RW serves, the prevailing wind direction and speed
- E. in the immediate vicinity of the terminal building
- F. a safe degree of separation exists between aircraft
- G. in a single hangar to large complexes
- H. an adequate runway
- I. baggage, fuel and food services
- J. separated by at least 1300m
- K. who control the ground operations of the airlines
- L. aircraft either by underground pumping facilities or by refuelling trucks
- M. safe take-offs and landings in all weather conditions
- N. which surrounds the terminal gates
- O. located at or near the terminal
- P. nearby wild life or obstructions to navigation such as mountains
- Q. an unobstructed view of the airport can be maintained

C. Retell the text using the word combinations:

- 1) The primary requirements - the aircraft at an airport - an adequate runway.
- 2) Airport RWs - to arrange - to permit the maximum number - safe take-offs and landings - weather conditions.
- 3) RW designs - to differ - the type of aircraft - the RW , the prevailing ... direction and speed and the availability of
- 4) Environmental factors - nearby wild life - obstructions to navigation such as - must - to consider;
- 5) Many airports - more than - .
- 6) Parallel RWs - must - to separate - 1300m.
- 7) If close, - to stagger to ensure - a safe degree of separation - exists - flight.
- 8) - design practices - to require each RW - parallel TWs.
- 9) Taxiways - short paths to connect the RWs - the apron, which – to surround - the terminal gates.
- 10) - in night landings - to increase visibility in -, RWs – to light - with white edge lights and TWs – to line - with blue edge lights.
- 11) The control tower – to be - a structure – to locate - at or near

- 12) It - to manager - all air traffic at
- 13) The tower - to locate and elevate - an unobstructed view of the airport - can – to maintain - from ... at all times.
- 14) At larger airports, smaller additional towers – to staff - by airline employees, - to control the ground operations - the airlines - to work for.
- 15) The airline tower staff – to manage ... ground vehicles and aircraft ... of the terminal building.
- 16) to co-ordinate baggage, fuel and food services.
- 17) Fuel normally - to store - in large - above ground and transported to aircraft either by or by ... trucks.
- 18) Repair facilities - to range - small facilities – to house - in a single hangar to large complexes that - to employ - thousands of trained -.

E. Describe ground services and facilities at Mineralnye Vody airport or any other airport.

RADAR OPERATIONS

The main terrain airport facility, which is of constant use, is Radar. Radars are classified into 4 types, considering their function, power and coverage. The most common type of radar is a Terminal Area Surveillance Radar for traffic control in the vicinity of an airport. This is a medium-range radar. Another type of radar is a long-range one, known as an En-route Surveillance Radar. The system has a range up to about 200miles. The third type of radar equipment is a Surface Movement Radar normally used with range about four miles. One more type of radar, not generally installed at civil airports, is a Precision Approach Radar. PARs are used as landing facilities for the procedure, known as GCA. Radars can also be classified by type of data showed. The initial and the simplest type of radar, called primary radar, began to be used in most parts of the world in the early 1950s. Another form of radar, a secondary surveillance radar is used for advanced air traffic control. When the word “radar” is used alone, it usually includes both primary and secondary radars. There are some more terms associated with radars. Radar Echo is a visual indication on display of a signal reflected from an object. Radar Response is a visual indication on display of a radar signal transmitted from an object in reply to an interrogation. Radar Blip is a collective term meaning both echo and response. Radar Identification is a process of definition that a radar target is radar return from a particular aircraft.

A. Find the synonym:

- 1) terrain
- 2) facility
- 3) classified
- 4) to consider
- 5) to install
- 6) to be associated with smth

B. Find the opposite:

- 1) constant
- 2) simple
- 3) initial
- 4) primary
- 5) early
- 6) include

C. Form the phrases according to the text:

- | | |
|---|---|
| 1. a Terminal Area Surveillance Radar for traffic control | a. term |
| 2. an En-route Surveillance Radar | b. facility |
| 3. a collective | c. are known as GCA. |
| 4. classified into | d. used with range about four miles |
| 5. the simplest type of radar | e. is used for advanced air traffic control |
| 6. The main terrain airport | f. a range up to about 200miles |
| 7. a Precision Approach Radar | g. in the vicinity of an airport |
| 8. a Surface Movement Radar | h. definition |
| 9. a secondary surveillance radar | i. 4 types |
| 10. a process of | j. called primary radar |

D. Choose the best appropriate word:

- 1) The main terrain airport facility, which is of ... use, is Radar.
- 2) Radars are ... into 4 types, 3)... their function, power and coverage.
- 4) The most ... type of radar is a Terminal Area Surveillance Radar for traffic control in the vicinity of an airport.
- 5) This is a medium-range radar. Another type of radar is a long-range one, known as an En-route ... Radar.
- 6) The system has a ... up to about 200miles.
- 7) The third type of radar ... is a Surface Movement Radar normally used with range about four miles.
- 8) One more type of radar, not generally installed at ... airports, is a Precision Approach Radar.
- 9) PARs are used as landing facilities for the procedure, known as GCA. Radars can also be classified by ... of data showed.

- 10) The ... and the simplest type of radar, called 11) ... radar, began to be used in most parts of the world in the early 1950s.
- 12) Another form of radar, a secondary surveillance radar is ... for advanced air traffic control.
- 13) When the word “radar” is used alone, it usually ... both primary and secondary radars.
- 14) There are some more terms ... with radars.
- 15) Radar Echo is a visual indication on display of a ... reflected from an object.
- 16) Radar Response is visual indications on ... of a radar signal transmitted from an object in reply to an interrogation.
- 17) Radar Blip is a collective term meaning both echo and
- 18) Radar Identification is a process of definition that a radar target is radar return from a ... aircraft.

1. secondary	constant	similar
2. divided	grouped	classified
3. counting	considering	depending on
4. compound	common	general
5. Surveillance	Primary	Observing
6. strength	range	length
7. source	equipment	means
8. civil	military	cargo
9. type	view	sort
10. forward	initial	beginning
11. chief	main	primary
12. prepared	used	activated
13. includes	involves	comprises
14. associated	related	connected
15. signal	target	blip
16. deck	display	screen
17. response	answer	reply
18. special	essential	particular

D. Retell the text using word combinations:

- 1) The main terrain airport facility - constant use - Radar.
- 2) Radars – to be classified into - 4 types - their function, power and coverage.
- 3) - common type - radar - a Terminal Area Surveillance Radar - traffic control - the vicinity of -.
- 4) - a medium-range radar.
- 5) - a long-range -, to know - an En-route Surveillance Radar.
- 6) - a range up to - 200miles.
- 7) The third type- a Surface Movement Radar normally – to use - with range - .
- 8) One more type of -, not generally – to install- at civil ..., is a Precision Approach Radar.
- 9) PARs – to use - as landing facilities - the procedure, - to know - as GCA.
- 10) Radars can – to be classified by -.
- 11) The initial and the simplest -, called - radar, - begin - to use - in most parts of the world -.
- 12) a secondary surveillance radar – to use- for advanced
- 13) When the word “radar” - to use -, it usually - to include both ... and ... radars.
- 14) terms – to associate - with radars.
- 15) Radar Echo - a visual indication - display - a signal reflected - an object.
- 16) Radar Response - a visual indication - display - a radar signal transmitted - an object - reply to an interrogation.
- 17) Radar Blip – to be - a collective term – to mean - both echo and response.

18) Radar Identification – to be -a process - definition - a radar target -to be - radar return - a particular aircraft.

E. Give the example of radar operation at any airport.

Bomb Threat

A bomb threat is generally defined as a verbal threat to detonate an explosive or incendiary device to cause property damage or injuries, whether or not such a device actually exists. Typically delivered by phone, or other telecommunication means, the great majority of such threats are the result of pranks or other sociopathies. Criminal statutes typically dictate severe penalties. For example, some states provide for penalties of up to 20 years in prison, up to \$50,000 fine, and restitution for the costs of the disruption.

Many bomb threats that are not pranks are made as parts of other crimes, such as extortion, hijacking, or robbery. Actual bombings for malicious destruction of property, terrorism purposes or murder often occur without any warning, let alone threats. In many cases it is very difficult and time-consuming to ensure the absence of any bomb or other hazardous device or substance.

For instance, several years ago Chicago's Airport was temporarily closed after a written bomb threat was found aboard a flight from Seattle to Chicago. Flight 202 landed safely but was not allowed to approach the airport terminal. The 129 passengers and five crew members were transported by bus to a secure area and were met by investigators. A written note was discovered in the aircraft during landing. The aircraft and the onboard luggage were searched but no bomb was found. Due to the incident the Federal Aviation Administration closed down all air traffic at the airport for more than 20 minutes but it caused only short delays to flights.

EXERCISES

A. Find a synonym:

- | | |
|-----------------|------------------------------------|
| 1. to detonate | a. mechanism |
| 2. device | b. fine (punishment) |
| 3. prank | c. demolition, destruction |
| 4. penalty | d. malevolent, ill-intentioned |
| 5. prison | e. to happen, to take place |
| 6. disruption | f. to reveal, to find |
| 7. malicious | g. aim, goal, objective, intention |
| 8. purpose | h. to explode |
| 9. to occur | i. trick |
| 10. to discover | j. jail |

B. Complete the following sentences with the phrases below (one phrase is used twice):

generally actually typically the great majority of such as let alone
time-consuming in case of for instance

- _____ bomb threats are due to pranks or other sociopathies.
- The process of ensuring the absence of any bomb or hazardous device is extremely _____.
- A bomb threat is _____ defined as a threat to detonate an explosive to cause property damage or injuries.
- An explosive device can actually not exist in case of a bomb threat.
- _____, actual bombings for malicious destruction occur without any warning.
- I can't change the oil in my car, _____ tune the engine.
- There are many reasons why bomb threats happen, such as extortion, hijacking, robbery.
- I can't add two and two, _____ do fractions.
- _____, press the alarm button.
- Many countries are threatened by earthquakes, _____ Mexico and Japan.

C. Fill in the correct preposition or conjunction:

A bomb threat is generally defined 1) _____ a verbal threat to detonate an explosive or incendiary device to cause property damage or injuries, 2) _____ or not such a device actually exists. Typically delivered 3) _____ phone, or other telecommunication means, the great majority of such threats are the result 4) _____ pranks or other sociopathies. Criminal statutes typically dictate 5) _____ severe penalties. For example, some states provide 6) _____ penalties of 7) _____ 20 years in prison, 8) _____ \$50,000 fine, and restitution 9) _____ the costs of the disruption.

Many bomb threats that are not pranks are made as parts of other crimes, such 10) _____ extortion, hijacking, or robbery. Actual bombings for malicious destruction of property, terrorism purposes or murder often occur 11) _____ any warning, let alone threats. In many cases it is very difficult and time-consuming to ensure the absence of any bomb or other hazardous device or substance.

For instance, several years ago Chicago's Airport was temporarily closed after a written bomb threat was found aboard a flight 12) _____ Seattle to Chicago. Flight 202 landed safely but was not allowed to approach 13) _____ the airport terminal. The 129 passengers and five crew members were transported 14) _____ bus to a secure area and were met 15) _____ investigators. A written note was discovered 16) _____ the aircraft during landing. The aircraft and the onboard luggage were searched but no bomb was found. Due to the incident the Federal Aviation Administration closed down all air traffic 17) _____ the airport for more 18) _____ 20 minutes but it caused only short delays 19) _____ flights.

D. Retell the text using the following key-words:

A bomb threat - a verbal threat - to detonate - an explosive - to cause property damage- injuries deliver - by phone - other means - the majority - the result of pranks

Criminal statutes - dictate - severe penalties

up to 20 years in prison - up to \$50,000 fine - restitution for - disruption

Many bomb threats - parts of other crimes – extortion - hijacking – robber

bombings - malicious destruction - occur - without any warning

difficult - time-consuming - to ensure the absence - hazardous device - substance

several years ago - Chicago's Airport - temporarily - written bomb threat

landed safely - not allowed - to approach – terminal

passengers - crew members – be transported - a secure area – investigators

A written note – be discovered - during landing

The aircraft - luggage – be searched - no bomb

Federal Aviation Administration - all air traffic - more than 20 minutes – to cause - short delays

E. Remember any bomb threat incident and tell the class about it.

Fire on board

Fire on board is one of the greatest hazards to flight safety. Any fire is an emergency status on board. Fire can either be a cause of an aircraft accident or incident or result from it. Fires occur in engines, engine bays, cabins, cargo holds, wheel wells and fuel tanks. Despite the fact that in-flight fire events are relatively rare, post-impact fires are not. Even when there is no evidence of an in-flight fire or reason to suspect one, the post impact fire can destroy a lot of evidence related to aircraft systems and structure. For this reason, some knowledge of how materials behave in the presence of fire is useful to the aircraft accident investigator. In addition, one of the areas an investigator must evaluate is the Fire Response and Survivability aspect of the accident. This requires familiarity with aircraft fire response procedures and capability.

If there is a fire on board, the crew have fire extinguishers to fight it. Should the source remain unidentified or the fire become out of control, an immediate emergency descent will be made.

Passengers on a Pacific Western 737 initiated an evacuation when a left-hand engine failure resulted in a fire, which subsequently engulfed the aircraft. Their rapid action was a major factor in everyone on board escaping alive.

EXERCISES

A. Continue the synonymic row:

1. peril, risk, danger -
2. security, protection –
3. happen, take place, befall –
4. unusual, infrequent, uncommon –
5. proof, testimony, grounds, sign –
6. ruin, demolish –
7. assess, estimate, appraise –
8. origin of fire, nature of fire –
9. instant, prompt –
10. following, later, succeeding – (adj)

B. Explain the following words in English

fire extinguisher *investigator* *wheel well* *evacuation* *rapid action*

C. Change the following sentences using the modal verbs in italics:

1. Fire is either a cause of an aircraft accident or incident or result from it.
CAN _____

2. Fires occur in engines, engine bays, cabins, cargo holds, wheel wells and fuel tanks.
MAY _____

3. The post impact fire destroys a lot of evidence related to aircraft systems and structure.
CAN _____

4. The aircraft accident investigators know how materials behave in the presence of fire.
SHOULD _____

5. An investigator evaluates the Fire Response and Survivability aspect of the accident.
MUST _____

6. An immediate emergency descent is made if the source remains unidentified or the fire is out of control.
MUST _____

D. Retell the text using the following key-words:

Fire - the greatest hazards - flight safety - emergency status
either - a cause - or - result
Fires - occur in - ...
Despite - in-flight fire – rare - post-impact fires
Even when - no evidence of - the post impact fire - destroy - aircraft systems – structure
some knowledge - materials - behave - useful
fire extinguishers - to fight
the source - unidentified - fire - out of control - an immediate emergency descent - be made
Pacific Western 737 – initiate - an evacuation - engine failure – fire - engulf the aircraft
rapid action - major factor – escape alive

E. Remember any fire accident and tell the class about it.

Landing Incidents

Despite considerable attention to the subject of landing incidents, the record so far is discouraging. Never had the flight safety become such a talking point in the world than in the last 2-3 years. Many incidents relate to problems during landing. New tools are being deployed every year to defeat great hazards to flight safety. For instance, new technology has been deployed to defeat CFIT accidents. An enhanced ground proximity warning system (EGPWS) provides crews with an earlier alert of threatening terrain. This is only one example of several incidents, which may have resulted in huge disasters, and a majority of these cases occurred because of faulty systems or their malfunction.

A false instrument landing system glideslope indication may have been a main factor to the disastrous accident with Korean Air Boeing 747-300. According to the investigation the crew believed they were on the correct descent when the aircraft crashed 5 km from touchdown. The investigators have led studies of other similar cases. They revealed that maintenance staff had erroneously left the system in a test mode, which sent out a carrier signal but no displacement information. The crew were given indications which showed the AC on glideslope and centerline no matter where the AC really was, provided it was within arc 40° either side of the localizer. So, crews are required to check gradual capture of the ILS localizer and glideslope as they intercept them. Pilots are advised to reject the system if it gives sudden indication that the AC is on centerline and glideslope.

EXERCISES

A. Match the columns to find out the meanings of the words and phrases.

pay attention	<i>opp.</i> minority
authorities	wrong operation
frequently	very often
relate to	happen
defeat great hazards	inform about the treat of closing land
GPWS ground proximity warning system	combat tremendous risks
alert of threatening terrain	special system to provide with proper and timely information about aptitude of AC
huge	a person or a group of people having right and power to control (police, government)
disaster	natural calamity/catastrophe
majority	very big
occur	defective or imperfect system
faulty system	refer to
malfunction	look at sth. more attentively

B. Answer the questions using the words from the first part of the text:

- a) During what phase of flight do incidents happen quite frequently?
- b) What are being developed to provide crews with an alert earlier?
- c) Why did the majority of these cases occur?

C. Fill in the gaps:

A false instrument _____ glideslope indication was the main _____ for the disastrous accident with Korean air Boeing 747-300. According to the investigation the _____ believed they were on the correct descent when the _____ crashed 5 km from touchdown.

The investigators revealed that the maintenance _____ had erroneously left the system in a test mode. It sent out a carrier signal but no displacement _____. The crew were given indications which showed the AC on _____ and centerline no matter where the AC really was, as long as it was within arc 40 degrees either side of the localizer.

So, the crew are _____ to check gradual capture of the ILS localizer and glideslope as they _____ them. Pilots are advised to not to use the system if it gives _____ indication that the AC is on _____ and glideslope.

staff intercept required reason aircraft crew

sudden information glideslope centerline landing system

D. Put in the right form of the verb:

1. If ILS glideslope indication ... (not be) false, the disastrous accident ... (not occur). **(III)**
2. If the crew ... (not believe) they were on the correct descent, the aircraft ... (not crash) 5 km from touchdown. **(III)**
3. If investigators ... (lead) studies of similar cases, they ... (get) more information. **(I)**
4. If the maintenance staff ... (not leave) the system in a test mode, the disaster ... (not happen). **(III)**
5. If the aircraft ... (be) within arc 40°, the crew ... (get) indication that AC is on glideslope. **(II)**
6. If crew ... (check) gradual capture of the ILS localizer, such accidents ... (not happen) again. **(I)**
7. If pilots ... (reject) the system with sudden indication on centerline and glideslope, they ... (prevent) similar events. **(I)**
8. If the system ... (not give) sudden indication on centerline and glideslope, pilots (not rely) on it. **(II)**

E. Retell the text using the following key-words:

Despite - the record – discouraging
flight safety - a talking point - last 2-3 years
Many incidents – landing
New tools – to defeat hazards - CFIT accidents
EGPWS - an earlier alert of - threatening terrain
majority - occurred - because of - faulty systems – malfunction
false ILS – main factor – disastrous accident
investigation – believe – correct descent – crash

study – similar cases

reveal – erroneously leave – test mode – no displacement information

show on glideslope – within arc 40°

require – gradual capture

advise – reject – sudden indication

F. Remember any landing incident from your (your colleges') working experience and tell the class about it.

Missed approach

Missed Approach is an instrument flight rules procedure, which is a standard (but optional) component segment of an instrument approach. Generally, if the pilot in command determines by the time the aircraft is at the decision height or missed approach point, that the runway or its environment is not in sight, or that a safe landing cannot be accomplished for any reason, the landing approach must be discontinued and the missed approach procedure must be initiated immediately.

The missed approach procedure normally includes an initial heading or track and altitude to climb to, typically followed by holding instructions at a nearby navigation fix. The pilot is expected to inform ATC by radio of the initiation of the missed approach as soon as possible.

ATC may simply acknowledge the missed approach call, or modify the missed approach instructions, for example with vectors to some other fix. ATC may subsequently clear the flight for another approach attempt, depending on the pilot's intentions, as well as weather and traffic considerations.

EXERCISES

A. Find a synonym in the box. More than one word is possible. There are some extra words.

optional
pilot in command
generally
determine
accomplish
discontinue
initiate
immediately
normally
for example
subsequently

<i>at once</i>	<i>begin</i>	<i>First Officer</i>
<i>Captain</i>		<i>stop</i>
	<i>typically</i>	<i>on the whole</i>
<i>cease</i>		<i>complete</i>
<i>elective</i>	<i>usually</i>	
		<i>for instance</i>
<i>Purser</i>	<i>afterwards</i>	
	<i>later</i>	
<i>decide</i>	<i>perform</i>	<i>as a rule</i>
<i>voluntary</i>		<i>commence</i>
	<i>fulfil</i>	<i>non-compulsory</i>

B. Replace the underlined words by their synonyms:

Missed Approach is an instrument flight rules procedure, which is a standard (but **(1) optional**) component segment of an instrument approach. Generally, if the **(2) pilot in command** **(3) determines** by the time the aircraft is at the decision height or missed approach point, that the runway or its environment is not in sight, or that a safe landing cannot be **(4) accomplished** for any reason, the landing approach must be **(5) discontinued** and the missed approach procedure must be **(6) initiated** **(7) immediately**. The missed approach procedure **(8) normally** includes an initial heading or track and altitude to climb to, **(9) typically** followed by holding instructions at a nearby navigation fix. The pilot is expected to inform ATC by radio of **(10) the initiation** of the missed approach as soon as possible. ATC may simply acknowledge the missed approach call, or **(11) modify** the missed approach instructions, **(12) for example** with vectors to some other fix. ATC may **(13) subsequently** **(14) clear** the flight for another approach attempt, depending on the pilot's intentions, as well as weather and traffic considerations.

C. Use the following sentences in 12 tenses. Make all necessary changes, using appropriate time phrases (e.g. *yet, by, for an hour, etc.*):

1. The pilot in command makes a decision to go around.
2. The controller gives holding instructions to the crew.
3. The pilot informs ATC by means of radio about his intentions.

D. Retell the text using the following key-words:

Missed Approach – procedure - an instrument approach

determine - at the decision height - missed approach point - the runway - not in sight

a safe landing - not be accomplished - for any reason - be discontinued - be initiated immediately

include - an initial heading - altitude to climb - holding instructions - navigation fix

to inform ATC - missed approach - as soon as possible

ATC – acknowledge - modify the missed approach instructions - vectors - other fix

ATC - subsequently clear - another approach attempt - depend on - the pilot's intentions - weather - traffic considerations

E. Have you ever had to carry out a MAP? In what circumstances?

What is a SAFA inspection?

The European Civil Aviation Conference (ECAC) has developed an inspection program that complements ICAO safety oversight audits in Europe by concentrating checks of aircraft during stops at European airports. This inspection program is known as the Safety Assessment of Foreign Aircraft (SAFA) Program.

ECAC member State aircraft, as well as aircraft from non-ECAC member States, are subject to ramp inspections that will evaluate the aircraft's documents and crew, the apparent condition of the aircraft and the carriage of mandatory cabin equipment. The intent of these inspections is to identify non-compliance with ICAO requirements set out in the Annexes to the Chicago Convention. General domains that must be covered by SAFA Program checks are:

1. General Condition of the aircraft
2. Manuals, compulsory on board
3. Checklists
4. Radio Navigation Charts
5. Minimum Equipment List
6. Flight Preparation arrangements
7. Life jackets / flotation devices available
8. Journey log book
9. General Internal Condition of the AC
10. Cabin Attendant's Station/Crew Rest Area condition
11. First Aid Kit / Emergency Medical Kit
12. Emergency exit, lighting and marking, Torches available
13. Access to emergency exits
14. General External Condition
15. Undercarriage, skids/floats condition
16. Power plant and Pylon condition
17. Safety of Cargo on Board

EXERCISES

A. Find synonyms for the following words:

1. gears
2. air hostess seat
3. work up
4. inspection
5. sphere
6. addition
7. appraise/appreciate
8. life vest
9. purpose
10. buoyant

B. Find antonyms for the following words:

1. danger/ hazard
2. home/local
3. correspondence
4. particular

5. open
6. outside/external
7. work
8. absent
9. concealed/secret
10. avoid

C. Explain the following words and phrases:

SAFA; ramp inspection; evaluate the AC condition; requirements; general domains; compulsory manuals; checklists.

D. Put in the right forms of the given verbs:

The European Civil Aviation Conference (ECAC) _____ (to develop) an inspection program that complements ICAO safety oversight audits in Europe by _____ (to concentrate) checks of aircraft during stops at European airports. This inspection program _____ (to know) as the Safety Assessment of Foreign Aircraft (SAFA) Program.

ECAC member State aircraft, as well as aircraft from non-ECAC member States, _____ (to subject) to ramp inspections that _____ (to evaluate) the aircraft's documents and crew, the apparent condition of the aircraft and the carriage of mandatory cabin equipment.

The intent of these inspections is _____ (to identify) non-compliance with ICAO requirements _____ (to set out) in the Annexes to the Chicago Convention. General domains that must _____ (to cover) by SAFA Program checks are:

1. General Condition of the aircraft
2. Manuals, compulsory on board and so on.

E. Retell the text with the help of the key words and phrases:

- The European Civil Aviation Conference (ECAC)- to develop an inspection program- to complement – Europe- to concentrate checks – at European airports.
- inspection program –to know- Safety Assessment of Foreign Aircraft (SAFA) Program.
- member State aircraft - aircraft from non-ECAC member States - ramp inspections ---
- to evaluate documents and crew - mandatory cabin equipment.
- intent of these inspections - non-compliance with ICAO requirements - the Chicago Convention.
- General domains – to be covered by SAFA Program checks are:

F. Have you ever had any problems with SAFA inspectors? Tell the class about your experience.

CAREER IN AVIATION

For most of us, romantic spirit of aviation never wears off. This is why millions of people work in Aviation.

Aviation isn't just flying, or 'piloting'. Aviation is aircraft design, systems engineering, test piloting, search rescue, human factors, air traffic control, jet mechanics, electrical engineering, computer systems, airport management, space exploration, customer service, and much more! There are lots of organisations and companies that help youngsters to achieve their goals to become part of this society. One of such is Careers In Aviation Inc.

As a benevolent, non-profit organization, Careers In Aviation Inc. assists students to explore the wide variety of opportunities in the aviation industry and is advancing the future of aviation careers through scholarship opportunities.

As students explore the wide variety of opportunities in aviation, they will discover immense support from various teaching and informative facilities. There are many reasons given by those working in the aviation industry on why they chose aviation. But we know the truth... it's because you love it! To be higher than the others – make true your dream, go to work in aviation.

EXERCISES

A. Make up the phrases from the following words:

1. ROMANTIC	A. EXPLORATION
2. AVIATION ISN'T FLYING	B. TO ACHIEVE THEIR GOALS
3. ABOVE AND BEYOND	C. SPIRIT
4. SPACE	D. OF OPPORTUNITIES
5. COMPANIES HELP YOUNGSTERS	E. YOUR DREAMS
6. TO BECOME	F. THE COCKPIT
7. TO EXPLORE THE WIDE VARIETY	G. THE TRUTH
8. VARIOUS TEACHING AND	H. PART OF THE SOCIETY
9. WE KNOW	I. OR PILOTING
10. MAKE TRUE	J. INFORMATIVE FACILITIES

B. Paraphrase the underlined words:

For most of us, romantic spirit of aviation never vanishes. This is why millions of people work in Aviation.

Aviation isn't just flying, or 'piloting'. Aviation is aircraft construction, systems engineering, trial flying, search and rescue, human factors, air traffic control, jet mechanics, electrical engineering, computer systems, airport management, space exploration, customer service, and many others! There are lots of firms/enterprises and companies that help young people to achieve their aims to become part of this society. One of similar is Careers In Aviation Inc.

As a beneficent, non-profit organization, Careers In Aviation Inc. helps students to try the great number of opportunities in the aviation industry and is advancing the future of aviation careers through scholarship opportunities.

As students explore the wide variety of opportunities in aviation, they will find extensive support from various teaching and informative aids. There are many reasons given by those working in the aviation

industry on why they chose aviation. But we know the truth... it's because you adore it! To be above the others – fulfil your dream, go to work in aviation.

C. Fill in the table with different parts of speech made from the following words:

NOUN	VERB	ADJECTIVE	ADVERB/ADVERB
	Achieve		
	Wear		
Mechanic			
			Engineering
Management			
Profit			
			Advancing
		Informative	
Industry			
	Choose		
Variety			

D. Finish the following sentences:

1. This is why millions of people _____.
2. Aviation is an entire world _____.
3. There are lots of organizations and companies _____.
4. Non-profit organization assists the students _____.
5. There are many reasons given by those working in aviation _____.
6. To be higher than the others - _____.

E. Retell the text with the help of the key words and phrases:

- romantic spirit of aviation
- millions of people- to work in Aviation.
- Aviation - flying, or ‘piloting’.
- aircraft design - systems engineering – search and rescue, human factors - computer systems - space exploration - much more.
- lots of organisations and companies - to help to achieve - part of society.
- non-profit organization - to assist students - wide variety of opportunities -aviation industry - through scholarship opportunities.
- To explore opportunities - to discover immense support - various teaching and informative facilities.
- many reasons - to work in aviation industry - to choose aviation.
- the truth - to love it.
- higher than the others – to make true dream - to work in aviation.

F. Why have you chosen this profession?

Aviation English

Safety experts are constantly seeking to identify means of improving safety in order to reduce the accident rates. With mechanical failures featuring less prominently in aircraft accidents, more attention has been focused in recent years on human factors that contribute to accidents. Communication is one human element that receiving renewed attention.

In 1998 the ICAO Assembly formulated Resolution in which the Council was urged to direct the Commission to consider the matter of English language proficiency and complete the task of strengthening the relevant requirements. States must take steps to ensure that ATC personnel and crews involved in flight operations in airspace where the use of the English language is required are proficient in conducting and comprehending radiotelephony communications in English.

The development and publication of guidance material related to language proficiency training and testing were seen as necessary.

States should ensure that their use of phraseologies aligns as closely as possible with ICAO standardized phraseologies.

Pilots and controllers should be aware of the natural hazards of cross-cultural communication. Native and other expert users of English should refrain from the use of idioms, colloquialisms and other jargon in radiotelephony communications. Plain language should be specific, explicit and direct.

EXERCISES

A. Correct the mixed sequences of letters and guess the words:

1. nosnatlycs
2. vorpimnig
3. rentomnylip
4. ibocneturt
5. futormaled
6. enprycicfio
7. telanver
8. vinvedlo
9. honcmenpriged
10. ginasl

B. Explain the following words and phrases:

Aviation English; plain language; human factor; proficient; guidance material; colloquialisms; ensure; to improve safety; flight operation; renewed attention.

C. Put in the right forms of the given verbs:

Safety experts 1. _____ constantly to identify means of 2. _____ safety in order 3. _____ the accident rates. With mechanical failures featuring less prominently in aircraft accidents, more attention 4. _____ in recent years on human factors that 5. _____ to accidents. Communication is one human element that 6. _____ renewed attention.

In 1998 the ICAO Assembly 7. _____ Resolution in which the Council 8. _____ to direct the Commission 9. _____ the matter of English language proficiency and complete the task of 10. _____ the relevant requirements. States must take steps 11. _____ that

ATC personnel and crews involved in flight operations in airspace where the use of the English language 12_____ are proficient in conducting and comprehending radiotelephony communications in English.

The development and publication of guidance material 13_____ to language proficiency training and testing 14_____ as necessary.

States should ensure that their use of phraseologies 15_____ as closely as possible with ICAO standardized phraseologies.

Pilots and controllers should 16_____ aware of the natural hazards of cross-cultural communication. Native and other expert users of English should 17_____ from the use of idioms, colloquialisms and other jargon in radiotelephony communications. Plain language should be specific, explicit and direct.

- | | | |
|---------------|------------------|------------------|
| A. to relate | G. to focus | M. to strengthen |
| B. to see | H. to be | N. to receive |
| C. to improve | I. to refrain | O. to consider |
| D. to seek | J. to contribute | P. to reduce |
| E. to align | K. to require | Q. to ensure |
| F. to urge | L. to formulate | |

D. Combine the following words into the phrases used in the text:

1. to identify means	A. receiving renewed attention
2. featuring less prominently	B. of guidance material
3. communication is element	C. be specific and direct
4. to consider the matter	D. in aircraft accidents
5. the development and publication	E. natural hazards of communication
6. the ICAO Assembly	F. of improving safety
7. aligns as closely as possible	G. formulated Resolution
8. controllers should be aware of	H. with the ICAO standardized phraseology
9. refrain from	I. the use of idioms
10. plain language should	J. of English language proficiency

E. Retell the text with the help of the key words and phrases:

- Safety experts - to identify means of improving safety - the accident rates.
- mechanical failures - less prominently in accidents – attention –to be focused - human factors.
- Communication - human element - renewed attention.
- In 1998 - to formulate Resolution - to direct the Commission - to consider - English language proficiency – to complete the task of strengthening.
- to take steps - to ensure- ATC personnel and crews- in airspace - English language is required - to be proficient - comprehending radiotelephony communications.
- publication - guidance material - training and testing - necessary.
- to ensure -phraseologies aligns -with ICAO standardized phraseologies.
- pilots and controllers - to be aware - natural hazards - cross-cultural communication. -expert users of English - to refrain - idioms, colloquialisms and other jargon - communications.
- Plain language - specific and direct.

F. What do you think, what is the best way of studying English?

Misunderstanding

There are cases of frequent misunderstanding between a pilot and a controller in stressful or emergency situations. The reason for that lies in several domains. The English used in emergency events can be confusing and does not give the information needed to make a reasonable assessment of the situation. The pilots may not be proficient in the use of English outside the standard laid down phraseologies. And there are no laid down phraseologies for emergency situations. It would be totally impossible to write such a document, and if it were ever attempted, some new emergency would arise which the document didn't contain. But there are also many incidents where the problem is clear, and the controller can act without bothering the crew for more precise information. If in doubt, and if unable to get more information from a hard-pressed crew, then a controller shall go for the worst scenario. To over-react never costs lives. To under react has. Never forget that one unusual situation can lead to another, and that they can overlap. One of the examples of misunderstanding can serve the case of a missed mayday call due to pilot's poor English and awful pronunciation. Air traffic controllers at Heathrow airport failed to understand two distress calls from an Italian airliner carrying 104 people about suffering a near complete loss of its navigational equipment in its final approach to London. That time unlike in lots of other cases the airplane fortunately landed safely.

EXERCISES

A. Correct mistakes in the following sentences:

1. There is lots of cases of misunderstanding between pilot and controller.(1)
2. The English used in emergency can be confused and don't give necessary information. (2)
3. There are laid down phraseology for emergency use. (1)
4. There are also many incident which the problem are clear. (3)
5. To over-react always costs lives. (1)
6. One unusual situation can't leads to another. (2)
7. Pilot missed mayday call due to poor visibility and pronunciation. (1)
8. That time unlike in lots of other case the airplane landing safety. (3)

B. Find extra word in each line:

1. There are cases of frequent the misunderstanding between a pilot and a controller in
2. stressful or emergency situations. The reason for that lies can in several domains.
3. The pilots are may not be proficient in the use of English outside the standard
4. laid down between phraseologies.
5. And there are no laid down any phraseologies for emergency situations.
6. It would be totally impossible to write such a document, and if it could were ever
7. attempted, some new emergency would arise in which the document didn't contain.
8. But there are also many much incidents where the problem is clear.
9. The controller can be act without bothering the crew for more precise information.
10. If unable to give get more information from crew, a controller shall go for the
11. worst scenario. To over-react never costs lives. To under react has not.
12. Never forget that one unusual situation can lead to one another,
13. and they can overlap. One of the well examples of misunderstanding can serve
14.the case of a missed mayday call due to his pilot's poor English and pronunciation
15. Air traffic controllers at Heathrow airport didn't failed to understand distress calls.

C. Make your own sentences using the following expressions:

1. frequent misunderstanding
2. emergency situations
3. give the information
4. reasonable assessment
5. proficient in the use of English
6. to be totally impossible
7. a hard-pressed crew
8. the worst scenario
9. awful pronunciation
10. navigational equipment

D. Retell the text with the help of the key words:

- cases of frequent misunderstanding - stressful or emergency situations.
- The reason - several domains.
- English - emergency events - to be confusing - information - to make assessment.
- pilots - to be proficient -use of English - standard phraseologies.
- laid down phraseologies - emergency situations.
- totally impossible - such a document – to be attempted - new emergency- to arise – not to contain.
- many incidents - the problem is clear - the controller - to act - bothering the crew - precise information.
- in doubt –to be unable - to get more information - hard-pressed crew -to go for the worst scenario.
- To over-react - to cost lives.
- To under react.
- Not to forget - unusual situation - lead to another - to overlap.
- the examples of misunderstanding - case of a missed mayday call - pilot’s poor English - awful pronunciation.
- controllers at Heathrow - to understand distress calls - airliner carrying 104 people - to suffer loss of navigational equipment - final approach to London.
- That time - lots of other cases - landed safely

E. Can you remember any accident connected with language?

Take Off Incidents

There are numerous problems at take off that can lead to incidents or even accidents. Starting from cancellation or change of clearance to take off abortion, traffic interference, and runway incursions. The cases of overheating or problems with steering gear are well known in aviation incidents lists. Quite often bird/animal hazards affect the successful course of a take off, let alone aircraft breakdowns. One of the deadliest take off accident took place at Los Rodeos on the island of Tenerife in 1977 when two Boeing 747 airliners collided. All 234 passengers and 14 crew members in the KLM plane were killed. 326 passengers and 9 crew members aboard the Pan Am flight perished, primarily due to the fire and explosions resulting from the fuel spilled in the impact. Fifty-six passengers and 5 crewmembers aboard the Pan Am aircraft survived, including the Captain, First Officer, and Flight Engineer. Most of the survivors on the Pan Am aircraft were able to walk out onto the left wing through holes in the fuselage structure.

As a consequence of the accident, there were sweeping changes made to international airline regulations and to aircraft. Requirements were introduced for standard phrases and a greater emphasis on English as a common working language. For example, the phrase "line up and wait" as an instruction to an aircraft moving into position but not cleared for take-off was implemented. Additionally the phrase "take-off" is only spoken when the actual take-off clearance is given. Up until that point both aircrew and controllers should use the phrase "departure" in its place (e.g. "ready for departure").

A. Find an odd word in each line:

0	There are numerous problems at take off that can be lead to incidents or	BE
1	even accidents. One of the deadliest take off accidents it took place in	
2	Tenerife in 1977 year when two Boeing 747 airliners collided. 583	
3	people perished. After the accident, sweeping changes were been	
4	made to them international airline regulations and to aircraft.	
5	Requirements were Introduced on for standard phrases. A greater	
6	emphasis was put on that English language. Additionally the phrase	
7	"take- off" is only was spoken when the actual take-off clearance is	
8	given. Up until that point both to the aircrew and controllers should use	
9	the phrase "departure" in its place (e.g. "how ready for departure").	

B. Find synonyms to the following words and phrases:

The word/the phrase	Synonyms
<i>Numerous</i>	<i>Many, several, multiple</i>
Lead to	
Perish	
Breakdown	
Take place	
Regulations	
To put emphasis on smth	
Permit	
Hazard	
Speak	

C. Explain the following words and expressions in English.

1. traffic interference
2. runway incursions
3. overheating
4. hazard
5. survive
6. consequence
7. sweeping changes
8. implement

D. Make up phrases combining words from the left column with the words from the right column:

1	flight	A	incursions
2	take off	B	changes
3	runway	C	gear
4	steering	D	and wait
5	the phrase "line-up and wait"	E	cancellation
6	immediate	F	into position
7	international	G	fuel
8	line up	H	abortion
9	move	I	regulations
10	spilled	J	was implemented
11	ready	K	member
12	crew	L	of clearance

E. Retell the text using the phrases given below:

numerous problems at take off - incidents or even accidents - flight cancellation – change of clearance - take off abortion - traffic interference -runway incursions – overheating or problems with steering gear - quite often - bird/animal hazards – affect the successful course of a take off - one of the deadliest - take place – Los Rodeos - Tenerife - 234 passengers and 14 crew members – to be killed - 326 passengers and 9 crew members - to perish – primarily - due to - resulting from – the fuel spilled – impact – survived – the Captain - First Officer - Flight Engineer – to be able to - walk out onto the left wing - holes in the fuselage structure - immediate changes - international airline regulations – aircraft - requirements – - to be introduced for standard phrases - a greater emphasis - English language – - "line up and wait" – to be implemented - aircraft moving into position - permit a take-off - "take-off" - the actual take-off clearance is given - the aircrew and controllers - the phrase "ready for departure"

F. Do you know any take-off incidents/accidents? Which do you think is the most important factor for preventing them from happening at airports?

Human Factor

According to the statistics, human factors are count between 60-80% of aviation crashes. These factors include: controller’s inattention, mechanic’s carelessness, engineer’s error and pilot’s fatigue.

Situational awareness is being aware of everything that is happening around and the relative importance of everything observed — a constantly evolving picture of the state of the environment. Situational awareness can be described broadly as a person’s state of knowledge or mental model of the situation around him or her. Situational awareness is important for effective decision making and performance in any complex and dynamic environment. Very often the pilots involved in accidents and incidents are unaware of the danger until it is too late. The ability of the flight crew to maintain situational awareness is a critical human factor in air safety. If the crew are aware of navigation system and monitor it properly, it will prevent or eliminate accidents. Various technical aids can be used to help pilots maintain situational awareness. A Ground proximity warning system is an on-board system. It will alert a pilot if the aircraft is about to fly into the ground. Other aircraft warning devices are alerting lights, voice signals, which are used in Traffic Alert and Collision Avoidance System (TCAS) and wind shear warning system. Also, air traffic controllers constantly monitor flights from the ground and at airports.

A. Find antonyms to the words and phrases given below:

Words/phases	Antonyms
<i>inattention</i>	<i>attentiveness, advertence</i>
carelessness	
ability	
to be aware of	
mental	
important	
effectively	
safety	
take off	

A. Give the explanation of the following words in English:

1. statistics
2. carelessness
3. fatigue
4. properly
5. awareness
6. air safety
7. technical aids
8. alert
9. eliminate
10. TCAS

B. Fill in the gaps using the phrases given below the text:

According to the statistics, human factors (1) between 60-80% of aviation crashes. These factors include: (2), mechanic’s carelessness, engineer’s error and (3)

Situational awareness is being (4) everything that is happening around and the relative importance of everything observed — a constantly evolving picture of the state of the environment. Situational awareness can be described (5) as a person’s state of knowledge or mental model of the situation around him or her. Situational awareness is important for effective (6) and

performance in any complex and dynamic environment. Very often the pilots involved in accidents and incidents are unaware of the danger until it is (7) The ability of the flight crew to maintain situational awareness is a critical human factor in air safety. If the crew are aware of navigation system and monitor it properly, it will prevent or eliminate accidents. Various (8) can be used to help pilots maintain situational awareness. A Ground proximity warning system is an (9) It will alert a pilot if the aircraft is about to fly into the ground. Other aircraft warning devices are alerting lights, voice signals, which are used in Traffic Alert and Collision Avoidance System (10) and (11) warning system. Also, air traffic controllers (12) monitor flights from the ground and at airports.

A	broadly
B	controller's inattention
C	TCAS
D	too late
E	are count
F	aware of
G	constantly
H	on-board system
I	wind shear
J	pilot's fatigue
K	technical aids
L	decision making

C. Retell the text using the phrases given below:

according to - human factors – to count - 60-80% - controller's inattention – mechanic's carelessness - engineer's error - pilot's fatigue - situational awareness – to be aware of - the relative importance of everything observed - a constantly evolving picture - state of the environment – to be described broadly - a person's state of knowledge - important for - decision making – performance - complex and dynamic environment -the pilots involved in accidents and incidents – to be unaware of - too late - to maintain situational awareness - a critical human factor - navigation system – monitor – properly - prevent or eliminate accidents - various technical aids - to be used - maintain situational awareness -a Ground proximity warning system - an on-board system – alert –to be about to fly into the ground - aircraft warning devices - alerting lights - voice signals – to be used in – TCAS – wind shear warning system - air traffic controllers - constantly monitor flights

D. Could you give any examples of the incidents or accidents in aviation, the reason for which was the human factor?

Administrative Problems

There are numerous administrative problems, which pilots face quite frequently. They start with Diplomatic Clearances, which are needed for every foreign aircraft to fly over or to land on foreign territory. The request must be received at least five working days before the flight. The flight shall be conducted in conformity with applicable current rules and regulations.

In terms of administrative problems customs regulations should be mentioned as well. The restrictions on the import of spirits, tobacco and currency are in force until now. The following articles are prohibited from entry by law of many countries: drugs, books, drawings, carvings, and any other article, which injures public security or morals, firearms (pistols, rifles, machine guns, etc.), ammunition (bullets), and parts of firearms.

The submission of a Flight Plan can cause problems as well. If there is a delay for more than 15 minutes the crew is supposed to prolong their Flight Plan and explain to the controller why the flight has been postponed. Passenger Manifest can also present a trouble for the crew in case there is no conformity in the actual number of passengers and the number specified in the Manifest. The First Officer must invite the supervisor or air company representative to sort out this problem.

A. Find an odd word in each line:

0	There are numerous administrative problems, which can pilots face quite	CAN
1	frequently. They may can start with Diplomatic Clearances, which are	
2	needed for every foreign aircraft to fly over above or to land on foreign	
3	territory. The flight it shall be conducted in conformity with applicable	
4	regulations. In terms of administrative problems but customs regulations	
5	should be mentioned as well. The submission of a Flight Plan can be	
6	cause problems with as well. Passenger Manifest can also present a	
7	trouble for the crew in case of there is no conformity in the actual	
8	number of passengers and the number that specified in the Manifest. The	
9	First Officer must invite him the supervisor or air company	
10	representative to be sort out this problem.	

B. Find synonyms to the following words and phrases:

The word/the phrase	Synonyms
<i>Numerous</i>	<i>Many, several, multiple</i>
frequently	
start	
to conduct	
currency	
prohibit	
firearms	
to delay	
applicable	
to sort out	

C. Make up phrases combining words from the left column with the words from the right column:

1	administrative	A	territory
2	quite	B	the current rules
3	applicable	C	frequently
4	foreign	D	of spirits
5	according to	E	problems
6	customs	F	Flight Plan
7	the import	G	the problem
8	public	H	problems
9	cause	I	the actual number of passengers
10	to prolong	J	security
11	to sort out	K	current rules
12	conformity in	L	regulations

D. Retell the text using the phrases given below:

numerous administrative problems - to face quite frequently – Diplomatic Clearances – to be needed for - to fly over or to land - foreign territory – to receive a request - five working days - to conduct in conformity with - current rules and regulations -in terms of - administrative problems - customs regulations - to mention - the restrictions on the import of – spirits – tobacco - currency - to be in force – articles – to be prohibited – entry - by law – drugs – drawings – carvings - public security or morals - firearms - ammunition - the submission of a Flight Plan - cause problems - a delay for more than 15 minutes – to be supposed to - prolong the Flight Plan – explain – to be postponed - Passenger Manifest -to present a trouble - in case - conformity in the actual number of passengers - the number specified in the Manifest - the First Officer - invite the supervisor - air company representative - to sort out the problem.

E. Have you ever faced any administrative problems before the flight? How did you manage to solve them?

Collisions

Collision is a crash between two objects, two vehicles. In aviation we differentiate between ground collisions and mid air collisions. In ground collisions two vehicles, aircraft, persons or animals are involved. Collision is an accident or even a disaster. At level crossings sometimes aircraft collide. Due to the velocity and mass of an aircraft it needs a long distance to react on pilots' input. For that reason the traffic collision avoidance system is installed on all passenger aircraft. The world's mid-air collision with the highest number of fatalities was in 1996, when Saudia Flight and Air Kazakhstan Flight crashed over India. It was mainly the result of the Kazakh pilot flying lower than the altitude his aircraft was given clearance for. 349 passengers and crew died from both aircraft. As a consequence it was recommended to create "air corridors" to prevent planes from flying in opposite directions at the same altitude.

The worst ground collision in aviation history was in Tenerife with the highest number of fatalities. In this disaster, 583 people died when a KLM Boeing 747 attempted take-off without clearance and collided with a taxiing Pan Am 747 at Los Rodeos Airport. Pilot error, communications problems, fog, and airfield congestion (due to a bomb threat at another airport) all contributed to this catastrophe.

A. Find antonyms to the words and phrases given below:

Words/phases	Antonyms
inattention	attentiveness, advertence
sometimes	
long	
install	
passenger aircraft	
the highest	
prevent	
opposite	
take-off	

B. Give the explanation of the following words in English:

- A. crash
- B. vehicle
- C. flight path
- D. fatality
- E. air corridors
- F. ground collision
- G. airfield congestion
- H. fog
- I. level crossings
- J. contributed to

C. Fill in the gaps using the phrases given below the text:

Collision is a crash between two objects, two vehicles. In aviation we (1) ground collisions and (2) collisions. In ground collisions two vehicles, aircraft, persons or animals are involved. Collision is an accident or even a disaster. At (3) sometimes aircraft collide. Due to the velocity and mass of an aircraft it needs a long distance to react to pilots' (4) For that reason the

(5) is installed on all passenger aircraft. The world's mid-air collision with the highest number of (6) was in 1996, when Saudia Flight and Air Kazakhstan Flight crashed over India. It was mainly the result of the Kazakh pilot flying at a (7) than he was instructed. 349 passengers and crew died from both aircraft. As a consequence it was recommended to create (8) to prevent planes from flying in (9) directions at the same altitude. The worst (10) collision in aviation history was in Tenerife with the highest number of fatalities. In this disaster, 583 people died when a KLM Boeing 747 attempted take-off without clearance and collided with a (11) Pan Am 747 at Los Rodeos Airport. Pilot error, communication problems, fog, and airfield (12) (due to a bomb threat at another airport) all contributed to this catastrophe.

A	level crossings
B	fatalities
C	lower altitude
D	differentiate between
E	inputs
F	taxiing
G	congestion
H	air corridors
I	ground
J	opposite
K	traffic collision avoidance system
L	mid air

D. Retell the text using the phrases given below:

collision - a crash between two objects – vehicles - to differentiate between – ground collisions - mid air collisions – ground collisions – to be involved - an accident - a disaster - level crossings – collide - due to - velocity - mass of an aircraft - long distance - to react on pilots' input - the traffic collision avoidance system – to be installed - passenger aircraft - mid-air collision - the highest number of fatalities – 1996 - Saudia Flight - Air Kazakhstan Flight – to crash - the result of - to fly lower than the altitude – to be given clearance for - as a consequence - to recommend - to create "air corridors" - to prevent planes from flying in opposite directions - the same altitude - the worst ground collision - aviation history – Tenerife - the highest number of fatalities - to attempt take-off without clearance – to collide with - pilot error - communications problems – fog - airfield congestion - to contribute to - catastrophe.

E. Could you give any examples of the collision accidents? Do you think all of these accidents could have been prevented from happening?