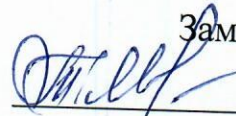


Государственное бюджетное профессиональное образовательное учреждение
Московской области
«Авиационный техникум имени В.А. Казакова»

УТВЕРЖДАЮ

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МЕТОДИЧЕСКАЯ РАЗРАБОТКА
AVIATION ENGLISH
PART IV

по дисциплине	Иностранный язык
для студентов	3 курса (6 семестр)
специальность	25.02.06 Производство и обслуживание авиационной техники


РАССМОТРЕНО

на заседании предметно-цикловой комиссии
общеобразовательных дисциплин

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Председатель ПЦК:  Никитина Е.В.

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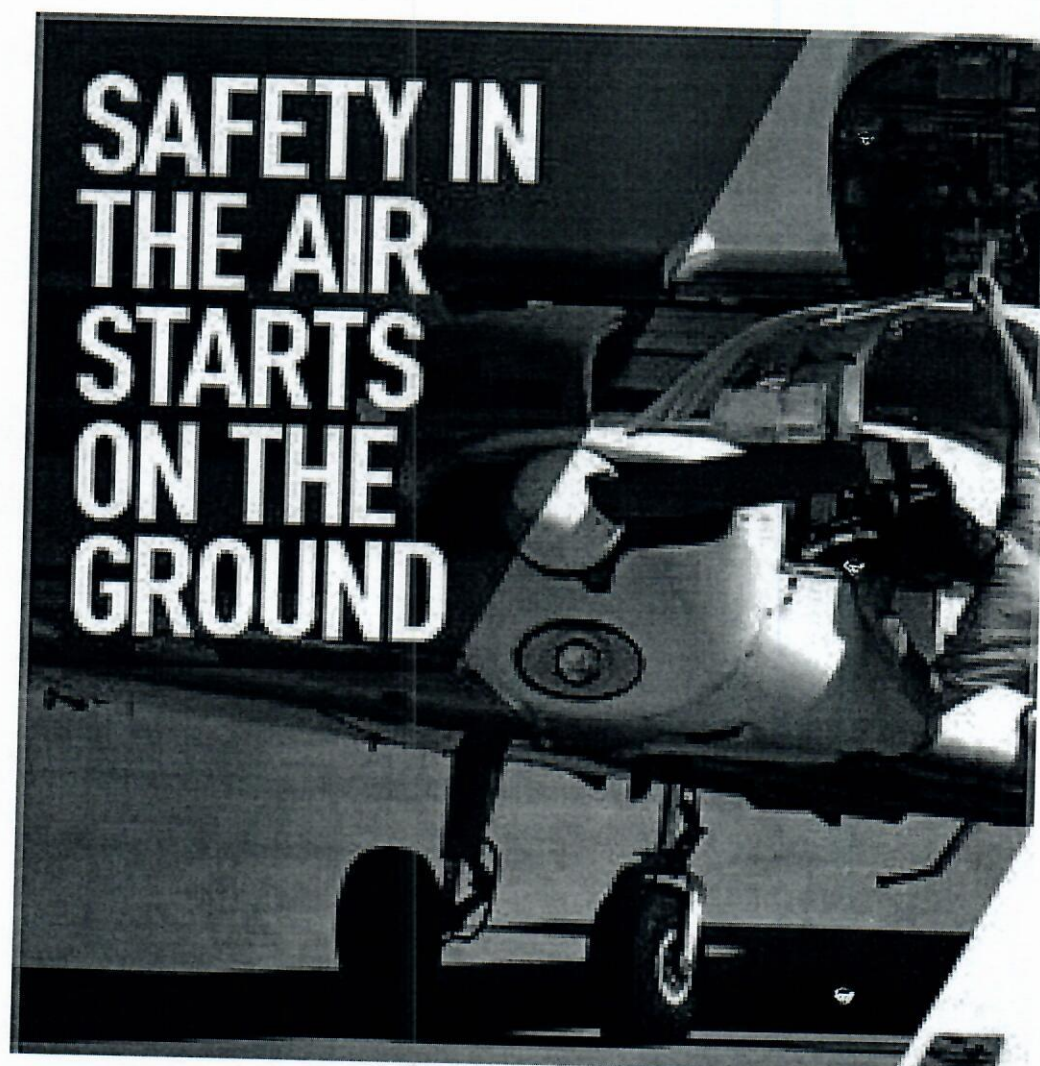
Преподаватель английского языка  Минакова Е.Г.

2022



AVIATION ENGLISH

For third-year students



АННОТАЦИЯ

Методическая разработка “Aviation English”, part IV по дисциплине «Иностранный язык в профессиональной деятельности» составлена для студентов 3 курса (6 семестр) в соответствии с Рабочей программой учебной дисциплины «Иностранный язык в профессиональной деятельности» по специальности 25.02.06 Производство и обслуживание авиационной техники.

Цель курса – приобретение студентами коммуникативной компетенции, уровень которой позволяет использовать иностранный язык, как в профессиональной деятельности, так и для целей самообразования.

Содержит аутентичные и адаптированные тексты по темам безопасность, человеческий фактор в авиации, птицы, животные, опасные грузы, меры безопасности, терроризм, действия экипажа и диспетчера в случае захвата.

Предназначено для формирования фонетических, лексических и грамматических навыков и навыков говорения на профессиональные темы.

Методическая разработка может использоваться для аудиторной и самостоятельной работы студентов.

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ТЕМА 7. БЕЗОПАСНОСТЬ ПОЛЁТОВ

1. SAFETY

→ READING PRACTICE

→ Study vocabulary:

collide - сталкиваться
collision [kə'liʒən] –столкновение
contribute - содействовать, способствовать, делать вклад
ensure [ɪn'sʊə] - гарантировать, обеспечивать
failure - (авария) отказ, неисправность
malfunctioning - работа с перебоями, сбой в работе, неисправность
practices - правила эксплуатации, инструкции
prevent [prɪ'vent] - предотвращать, предупреждать
prevention [prɪ'venʃən] - предупреждение
proficiency – квалификация, опытность
provisions обеспечение, оборудование, оснащение
psychology [saɪ'kɒlədʒɪ] - психология
regulations - правила; нормы, нормативные документы
revise [rɪ'vaɪz] - проверять; исправлять



Safety is the most important problem in aviation. The prevention of collisions between aircraft in the air and on the ground is the main task of aviation specialists.

The achievement of aviation safety is the result of progress in many sciences and disciplines including engineering, aerodynamics, meteorology, psychology, medicine and

economics.

Safety is ensured by thousands of ICAO and governmental regulations, by high standards in the design and manufacture of an aircraft and by rigid (strict) procedures of airline safety practices.

The aviation industry is constantly taking steps to prevent accidents but the crashes do occur time after time. They result from different causes: failure in the aircraft structure, human errors, navigational failures, malfunctioning of airborne and ground aids, hazardous weather conditions and so on.

Poor knowledge of English can also contribute to or result in an accident or incident. Therefore ICAO revised the provisions related to the use of the language for radiotelephony communications and demands good discipline to follow more closely to standard phraseology in all air-ground exchanges.

Experience has shown that phraseology alone is not sufficient to cover all of the potential situations, particularly in critical or emergency situations. That's why proficiency in common or plain language is also of great importance.

One of ICAO's chief activities is standardization in all spheres of aviation operations. The main ICAO document is SARPS (International Standards and Recommended Practices). Its main task is to provide the necessary level of standardization for safe and regular air operations.

→ VOCABULARY PRACTICE

I. Ответьте на вопросы:

1. What is the most important problem in aviation?
2. What is the main task of aviation specialists?
3. By what means is safety ensured?
4. What factors may cause accidents?
5. What can you say about the role of language in the problem of safety?
6. Can radiotelephony alone cover all of the potential situations?
7. What is the main document ICAO?
8. What is the main task of SARPS?

II. Образуйте новые части речи от следующих терминов, используя суффиксально-префиксальный способ.

Terror, danger, care, safe, prevent, collide, special, achieve, ensure, govern, regular, differ, fail, navigate, hazard, know, provide, relate, communicate, sufficient, proficient, necessary, critical, close.

III. Найдите лишнее слово. Cross out the odd word.

1. Incident, crash, redundancy, accident.
2. Law, refinement, regulation, bill.
3. Error, cause, mistake, blunder.
4. Obstruction, hazard, threat, danger.
5. Temperature, lighting, lightning, wind.
6. Legislation, disasters, ATC, navigation aids.

IV. Найдите синонимы к следующим терминам. Find in the text synonyms to the following words.

Avoidance, crash, security, advancement, guaranteed, rules, production, happen, failure, help, dangerous, thus, carefully, skills, significance, main.

V. Составьте словосочетания из колонок А и В. Match words from each column to make a compound noun or expression.

A	B
1. Flight	a. awareness
2. human	b. guard
3. accident	c. safety
4. key	d. factor
5. civil	e. point
6. aviation	f. traffic
7. system	g. prevention
8. turning	h. error
9. situation awareness	i. reaction
10. air	j. aviation
11. safeguard	k. malfunction
12. human	l. industry

VI. Найдите определение к терминам. Find a word which has a similar meaning to each of the following.

redundancy / obstruction / airworthy / to maintain / regulation / interdependent / to reduce / hazard / syllabus / to prevent

1. An official rule or order.
2. To make or become smaller in size, number, extent, degree, intensity, etc.
3. Something that blocks a road or path, prevents progress.
4. An outline or summary of a course of studies.
5. To keep from happening, especially by taking precautionary action.
6. Related to one another in such a close way that each one needs the others in order to exist.
7. Something that could be dangerous or cause damage or accidents.
8. To keep in proper or good condition.
9. A situation in which something is not needed, especially because the same thing or a similar thing already exists.
10. In good condition and safe to fly.

VII. Составьте всевозможные словосочетания. Think up all the possible word combinations.

VERBS		NOUNS
to advance to enhance = to increase to assure = to ensure = to guarantee = to secure	to make to improve to threaten to promote	safety error mistake technology

to affect to manage to achieve to anticipate ≠ to prevent	to mitigate <i>смягчать;</i> <i>уменьшать</i> to detect = to monitor to avoid to commit to eliminate	management obstacles accident hazard operation
--------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------

VIII. Заполните пропуски предложениями. Fill in the gaps using the following prepositions.

at / of / in / into / with / on / in spite of / due to

1. ---- fact, the slogan “Safety is everybody’s business” means that everybody should be aware of the consequences of their mistakes and try to avoid them.
2. Aircraft accidents result --- losses of vital resources, namely people and equipment.
3. Accident prevention aims ---- avoiding errors at all levels.
4. Accidents continue to occur --- --- --- the existence and enforcement of numerous rules and regulations.
5. A common phenomenon of human behaviour is that the risk perception and acceptance vary --- accordance --- the situation.
6. It is not possible to identify those accidents which did not occur as a result ---- accident prevention.
7. With the future development and improvement of airplanes, it becomes necessary to take human factors --- account, to reduce errors on the part of the crew.
8. The various parties involved --- a major accident are interested in the investigation of the true cause of the accident.
9. Aviation has traditionally rested --- selection, training, licensing and detailed written procedures to assure safety.
10. ICAO is working --- developing a Global Aviation Safety Plan (GASP).
11. Aircraft manufactures help all involved --- the aviation industry succeed --- dramatically reducing the accident rate worldwide.
12. Number --- accidents have been caused --- --- lack of synchronization of man and machine.
13. Each pilot should be trained to manage risk --- order to keep all situations ----- control.

IX. Переведите на английский язык. Translate into English.

1. Самая важная проблема в авиации – безопасность.
2. Для обеспечения безопасности полетов ИКАО установила специальные правила и процедуры.
3. Все государства – члены ИКАО должны строго соблюдать все правила и процедуры, принятые ИКАО.

4. Одна из самых задач авиационных специалистов – предотвращать столкновение самолетов в воздухе и на земле.
5. Достижения в технике, аэродинамике и других науках повышают авиационную безопасность.
6. Еще одним условием, обеспечивающим авиационную безопасность, является стандартизация во всех авиационных операциях.
7. Всем авиационным специалистам очень важно знать английский язык.
8. Хорошее знание английского языка необходимо для обеспечения безопасности полетов.
9. Причина катастрофы - человеческая ошибка.
10. Самолет не смог вылететь из-за опасных погодных условий.
11. Отказ двигателя привел к катастрофе.
12. В районе аэропорта аварийная ситуация.
13. Одна из главных задач ИКАО – обеспечивать необходимый уровень безопасности.

2. HUMAN FACTORS IN AVIATION

→ READING PRACTICE

→ Study vocabulary

application - применение

awareness – понимание, осведомленность, информированность

convene [kən'vi:n] - созывать, собирать (заседание, встречу)

conviction [kən'vɪkʃ(ə)n] – убеждение

encouraging – обнадеживающий

endorse - подтверждать, одобрять; поддерживать, рекомендовать

implementation - выполнение, осуществление,

ongoing - продолжающийся, непрерывный, постоянный

to pursue challenges



Human factors is a critical aspect of aviation safety, one that ICAO began to address more than a decade ago. ICAO convened the first in a series of global symposia on flight safety and human factors in 1990. From the beginning, when the first event was held in a city known then as Leningrad, there was a conviction that international aviation could make enormous progress in improving safety through the application of human factors knowledge.

The first symposium was a turning point and the stage for following meetings in the United States in 1993, in New Zealand in 1996 and, finally in Chile in 1999. But still a human error remains a significant safety concern.

The purpose of the worldwide symposia and 10 regional seminars which were held in the past decade was to increase the awareness of States, industry and organizations in all ICAO regions about the importance of human factors. The ongoing implementation of the ICAO communication, navigation, surveillance and air traffic management (CNS/ATM) systems concept has introduced new challenges, and also new possibilities for human factors. The main aim is to ensure that the safety and efficient transportation of passengers and goods in civil aviation.

The ICAO flight safety and human factors programme is safety-oriented and operationally relevant. Moreover, it is practical since it must deal with real problems in a real world. Through the programme, ICAO has provided the aviation community with the means and tools to anticipate human error and contain its negative consequences in the operational environment. Furthermore, ICAO's efforts are aimed at the system – not the individual.

The global aviation safety plan (GASP) was developed by the ICAO Air Navigation Commission in 1997 and subsequently approved by the ICAO Council and endorsed by the ICAO Assembly. GASP was designed to coordinate and provide a common direction to the efforts of States and the aviation industry to the extent

possible in safety matters. It is a tool that allows ICAO to focus resources and set priorities giving emphasis to those activities that will contribute the most to enhancing safety. Therefore the flight safety and human factors programme is among the six major activities that comprise the plan.

→ VOCABULARY PRACTICE

I. Ответьте на вопросы. Answer the questions.

1. When did ICAO begin to address to the aspect of human factors?
2. When and where was the first symposium on flight safety held?
3. What can improve aviation safety?
4. How many symposia on flight safety were held by ICAO?
5. What was the purpose of the symposia and seminars?
6. Where can the knowledge of human factors be applied?
7. What is the ultimate goal of civil aviation?
8. What is the ICAO flight safety and human factors programme?
9. What for was the global aviation safety plan developed?
10. Why is the flight safety and human factors programme so important?

II. Переведите термины и образуйте новые части речи, используя суффиксы и префиксы. Translate the words and form derivatives.

Safe, navigate, operate, industry, communicate, progress, improve, organize, efficient

III. Найдите в тексте эквивалент следующим словосочетаниям. Find in the text equivalents to the following word-combinations.

знание человеческого фактора; важное дело для безопасности; идея систем связи, навигации, обзора и управления воздушным пространством и воздушным движением; программа ИКАО по безопасности полетов и человеческому фактору; план по авиационной безопасности в мировом масштабе; комиссия ИКАО по воздушной навигации; вопросы безопасности.

III. Подберите антонимы. Find antonyms to the words and phrases given below:

Words/phases	Antonyms
1. inattention	a. unsafety
2. carelessness	b. land
3. ability	c. disability
4. to be aware of	d. unimportant
5. mental	e. physical
6. important	f. careful
7. effectively	g. attentiveness, advertence

8. safety
9. take off

- h. unaware
- i. ineffectively

IV. Расшифруйте следующие аббревиатуры. Give the explanation of the following abbreviations in English and Russian:

ICAO, CNS/ATM, GASP

V. Заполните текст словами. Fill in the gaps using the phrases given below the text:

- | | | |
|--------------------------------|------------------------|---------------------|
| 1. broadly | 4. too late | 8. wind shear |
| 2. controller's
inattention | 5. are count | 9. pilot's fatigue |
| 3. TCAS | 6. aware of constantly | 10. technical aids |
| | 7. on-board system | 11. decision making |

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.

VI. Переведите на английский язык. Translate into English.

1. Человеческий фактор является одним из важнейших аспектов авиационной безопасности.
2. В течение последнего десятилетия ИКАО провела несколько симпозиумов и семинаров, связанных с человеческим фактором в авиации.

3. Знание человеческого фактора может значительно повысить безопасность полетов.
4. Для повышения безопасности новые системы связи, навигации и обзора постоянно широко внедряются.
5. Совершенствование управления воздушным движением будет продолжаться.
6. Программа по безопасности полетов и человеческому фактору является инструментом, который позволяет предупреждать человеческие ошибки при выполнении полетов.
7. Вопросы безопасности в авиации и человеческий фактор являются самыми важными в плане авиационной безопасности в мировом масштабе.

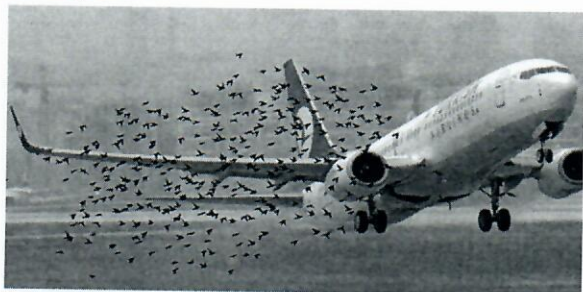
3. HOW BIRD STRIKES CAN CAUSE PLANE CRASHES

→ READING PRACTICE

Study vocabulary:

amount to – привести к ч-л
concerned citizens - сознательные граждане
consequences - последствия
contribute in – вносить вклад во ч-л
cover a situation - охватывать ситуацию
engine failure - отказ двигателя
environmental law - законы об охране окружающей среды
extent of – объём, предел
fan blade - лопасть вентилятора
gassing ['gæsiŋ] - окуривание газом
grassland – луг, пастбище
hamper ['hæmpə] - препятствовать, мешать (чему-л.); затруднять
hawk [hɔ:k] – ястреб
imminent disaster - неминуемая катастрофа
initiative - программа [мероприятий], план, проект

machinery [mə'ʃi:n(ə)rɪ] – аппаратура, машинное оборудование; машины
maiden flight - первый полёт
majority of - большинство
migratory - перелётная птица
occur [ə'kɜ:] - происходить, случаться
predator ['predətə] – хищник
prevention -профилактика, предотвращение; предохранение; предупреждение
scare off (away) – отпугивать
sparrow ['spærəu] - воробей
starling ['sta:lɪŋ] I – скворец
subject to - подвергать ч-л
suck - всасывать, засасывать
trailing edge flaps – закрылки
unrecoverable – непоправимый
wherein - где (в придаточных предложениях), в чём, в отношении чего



The Dangers of Bird Strikes

2. How can a flock of harmless geese kill people? The answer is clear: through a bird strike! Bird strikes have been in the news since 1912 and very little has been achieved on the prevention front. The most disastrous bird strike accident was reported in 1960 when 62 people were killed in an Eastern Airlines aircraft crash after a flock of starlings were sucked into the plane's engines.

What Causes a Plane to Crash After a Bird Strike?

3. The bird that strikes the aircraft might damage the nose, the trailing edge of aircraft's wing flap or the engine. The size of the bird also matters in determining the extent of destruction it can cause. A tiny bird like sparrow would not be able to cause any damage that would hamper the functionality of the aircraft. However, a flock of geese might cause unrecoverable damage, eventually leading to a plane crash.

4. The fan blades of the plane engine move at a very high speed to generate sufficient power required by the aircraft to fly. If the bird hits the engine, it may damage or break off one or several fan blades leading to significant engine failure. This kind of accident generally leads to unrecoverable consequences, and no matter how skilled the pilot is nothing can be done to avoid the imminent disaster.

Where do Bird Strikes Usually Occur?

5. Bird strikes usually occur at lower altitudes, especially during take-off or landing. This is because the aircraft shares almost the same air space as that of the birds. At many places, the surrounding areas of the airports are open fields and grasslands that attract migratory birds. It is noted that majority of the bird strikes occur during the season of migration when birds fly across the sky in groups.

Are There Any Initiatives to Control the Bird Population Around Airports?

6. Many airports have bird management initiatives associated with them. Animals like dogs and even predators like hawks are used to scare off birds. Just a few years back, bird populations were controlled by subjecting such bird-rich areas around the airports to gassing.

7. Because of the animal activists and other concerned citizens, lethal methods to control bird populations are no longer in use. This has also indirectly led to an increase in accidents due to bird strikes. In fact, environmental laws have greatly contributed in increasing bird populations to unknown levels, causing bird strike hazards to have become an unsolvable question in front of many airport authorities.

8. Are there any preventive measures to scare off the birds and dogs from the landside areas and airside areas of the airports?

Bird Strike Tests on Airplanes

9. Most of the aircraft used by airlines are subjected to a "bird strike" test before they start their maiden flights, wherein dead birds are shot against the plane's engine that revolves at maximum speed. Then, the time taken by the plane to recover and land safely is examined under different dimensions such as during take-off and landing. These tests are carried out under the aid of a computer simulation. Many times, such simulation tests fail to cover a situation wherein both the engines of the plane are damaged.

1. Answer the questions:

1. What is a bird strike?
2. What can damages to the aircraft lead to?
3. How long have bird strikes been registered?
4. How much have been done to prevent bird strikes?
5. What was the most disastrous bird strike accident?
6. What parts of an aircraft can birds damage?
7. What role does the size of a bird play in collisions?
8. What kind of bird strikes lead to unrecoverable consequences?
9. Can such disaster be avoided?
10. Where, when and why do bird strikes usually occur?

11. What methods cannot be used to control bird population? Why?
 12. How are bird strike tests simulated?

2. Изучите разницу между следующими терминами. Mind the difference:

Term	Definition	Translation	Example
A collision	an instance of one moving object or person striking violently against another	столкновение	aerial / mid-air collision — столкновение в воздухе (летательных аппаратов) bird collision — столкновение с птицей (во время полёта самолёта) near collision — опасное сближение (при полёте самолёта)
to collide with smb/smth		сталкиваться с кем-л., наталкиваться на что-л.	
a strike	a sudden attack	удар	a bird strike — столкновение самолёта со стаей птиц
to strike (struck, stricken)		ударять, бить, наносить удар	strike smb a blow — нанести кому-либо удар strike a match — зажечь спичку/чиркнуть спичкой clock strikes — часы бьют
a damage	physical harm that impairs the value, usefulness, or normal function of something	авария; повреждение; порча; разрушение; ущерб, потери	equipment damage повреждение оборудования maintenance damage повреждение при техническом обслуживании structural damage повреждение конструкции; разрушение конструкции
to damage		повреждать, наносить повреждения; портить; разрушать; наносить ущерб	destruction be damaged — пострадать, быть поврежденным
a destruction	the action or process of causing so much damage to something that it no longer exists or cannot be repaired	разрушение; уничтожение	cause destruction — вызывать разрушение the extent of destruction — объем разрушений
to destruct		разрушать; уничтожать	
a crash	collide violently with an obstacle or another vehicle	ария; разрушение; полный выход из строя; поломка	a plane crash — авиакатастрофа, падение самолёта
to crash		потерпеть аварию, крушение	hit
a hit	accidentally strike (part of one's body) against something, often	толчок, удар	

	causing injury		
to hit		ударять(ся); сталкиваться; столкнуться; толкать	<i>hit the engine</i> – столкнуться с двигателем
disaster	a sudden accident or a natural catastrophe that causes great damage or loss of life	повреждение; авария	<i>catastrophic / devastating / major / tragic / unqualified disaster</i> — страшное несчастье <i>impending disaster</i> — приближающаяся / надвигающаяся беда <i>national disaster</i> — национальная катастрофа <i>natural disaster</i> — стихийное бедствие
disastrous [dɪˈzɑːstrəs]		бедственный, гибельный, пагубный	
hazard	a danger or risk, a potential source of danger	опасность; риск; опасное положение	<i>hazards of life</i> – перипетии судьбы/превратности жизни
to hazard		рисковать, ставить на карту, подвергать опасности	
hazardous	dangerous	опасный, рискованный	<i>hazardous conditions</i>

3. Complete the sentences using the words from the table. Вставьте слова из таблицы.

- Two aircraft _____ over the sea, killing 70 people on board.
- The house was _____ by fire.
- Although many people were _____ by falling glass, the damage was nothing compared to what had happened in Siberia nearly one hundred years ago.
- The floods brought death and _____ to the area.
- A _____ is strictly defined as a _____ between a bird and an aircraft which is in flight or on a take off or landing roll.
- For smaller aircraft, significant _____ may be caused to the aircraft structure as a result of bird ingestion into engine air intakes. This has resulted in a number of fatal _____.
- Overpopulation has been _____ for the planet.
- Polluted water sources are a _____ to wildlife.
- Larger jet-engined aircraft are most likely to experience the _____ effects of strikes as the consequences of engine ingestion.
- A bird _____ the engine can have a serious effect on a plane's ability to fly.

4. Прочитайте статью и составьте 10 вопросов. Кратко изложите содержание статьи. Read the article and make up 10 questions in the form of a plan. Summarize the article.

Slow moving turtle delays five planes at Japan airport

Turtles on a Runway probably will never rival Snakes on a Plane for dramatic effect, but one reptile has made headlines after an innocent amble along the tarmac at Japan's second-busiest airport, delaying five planes.

The turtle, which weighs just over 2kg, was seen moving slowly along the tarmac at Narita international airport near Tokyo on Friday morning, prompting a pilot preparing for takeoff to contact air traffic control.

Staff removed the animal with a net and checked the 4,000-metre runway for other foreign objects, causing a 15-minute delay to five flights, according to the Mainichi Shimbun.

They included an All-Nippon Airways Airbus A380 whose fuselage is decorated with light and dark blue images of sea turtles, an embellishment that debuted in July last year to celebrate the carrier's service to Hawaii, where the animals are regarded as sacred.

While airport workers are occasionally called on to remove stray cats, racoon dogs and rabbits from the runway, turtle sightings are extremely rare, the Mainichi said. Narita officials believe the creature may have come from the airport's retention pond, located about 100 metres from the runway, the newspaper added.

After ANA had to cancel its 14 weekly flights to Honolulu due to the coronavirus pandemic, the airline has been using its fleet of A380s on domestic routes. The plane in question was about to take off on a flight to the southern Japanese island of Okinawa when the turtle made its appearance.

The airline has shrugged off the disruption. "In Hawaii, sea turtles are seen as bringing good luck, and we hope this turtle that came to see the flight off signals a bright future," it said in a statement.

4. DANGEROUS GOODS. PREVENTIVE MEASURES.

→ READING PRACTICE

Annex 17 Security to the Convention on International Civil Aviation

1. Выпишите из Главы 1 Definitions (см. Appendix 1) Приложения 17 к Конвенции ИКАО о международной гражданской авиации. Безопасность / Annex 17 Security следующие термины. (Стр.1-1).

Russian terms	English Terms
1. авиационные спецработы	
2. аспекты человеческого фактора	
3. аэронавигационного средства или службы	
4. безопасность	
5. влиять на безопасность	
6. воздушная реклама	
7. воздушное судно, находящееся в эксплуатации	
8. возможности человека	
9. выявление уязвимых мест	
10. груз или почта с высокой степенью риска	
11. грузовые склады	
12. досмотр	
13. захват заложников	
14. защита гражданской авиации	
15. зона вылета	
16. зона сортировки багажа	
17. зоны наивысшего риска	
18. и/или обнаружения оружия, взрывчатых веществ	
19. контролируемая зона	
20. людские и материальные ресурсы	
21. наблюдение, патрулирование	
22. нарушать тем самым должный порядок и дисциплину	
23. насильственное проникновение	
24. не соблюдать правил поведения	
25. недисциплинированный пассажир	
26. незаконное вмешательство	
27. незаконный захват	
28. неопознанный багаж	
29. обзор состояния безопасности	
30. обнаружить запрещенные предметы	
31. общественность	
32. опасное устройство	
33. осуществить акт незаконного вмешательства	
34. охраняемая зона ограниченного доступа	

35.подвергать опасности, ставить под угрозу	
36.подозрительные предметы	
37.поиск и спасание	
38.помещение на борту оружия	
39.представлять угрозу для ВС	
40.пункт досмотра	
41.рабочая площадь аэропорта	
42.разрушение	
43.серьезное увечье	
44.сообщение ложной информации	
45.специализированные виды обслуживания	
46.ставить под угрозу	
47.эффективность авиационной деятельности	

2. Прочитайте главу 2. GENERAL PRINCIPLES и ответьте на вопросы:

1. What is the main objective and insurance of each contracting state?
2. Enumerate (enlist) all measures of international cooperation in terms of security. (use the Infinitive)
e.g. To develop and exchange of information

3. Прочитайте главу 3. ORGANIZATION и ответьте на вопросы:

3. Who coordinates the implementation of security controls?
4. What does quality control imply? (use the Present Participle)
e.g. subjecting to background checks and selection procedures

4. Прочитайте главу 4. PREVENTIVE SECURITY MEASURES и ответьте на вопросы:

5. Enumerate some access control measures. (Use the Infinitive)
e.g. to control the access to airside areas at airports
6. What preventive measures relating to aircraft should be taken?
7. What preventing hold baggage measures should be taken?

5. Прочитайте главу 5. MANAGEMENT OF RESPONSE TO ACTS OF UNLAWFUL INTERFERENCE и ответьте на вопросы:

8. What measures are established in case of unlawful interference?
e.g. The following measures should be taken:

— *To search the aircraft for concealed weapons, explosives or other dangerous devices, articles or substances*

→ VOCABULARY PRACTICE

6. Translate into English:

1. Авиационная безопасность — комплекс мер, а также людские и материальные ресурсы, предназначенные для защиты гражданской авиации от актов незаконного вмешательства.
2. Незаконный захват ВС, заложников создают угрозу безопасности гражданской авиации, а также ложная информация.
3. Авиационная безопасность обеспечивается посредством предотвращения доступа посторонних лиц и транспортных средств в контролируруемую зону аэропорта или аэродрома.
4. Досмотр применяется для обнаружения подозрительных предметов, взрывчатых или других опасных устройств.
5. Авиационные спецработы — это эксплуатация ВС в таких областях, как строительство, фотографирование, топографическая съемка.
6. Груз с высокой степенью риска может иметь признаки вскрытия и представлять угрозу для ВС.
7. Недисциплинированный пассажир не выполняет указаний персонала аэропорта или членов летного экипажа.
8. На безопасность полетов, авиационную безопасность и эффективность авиационной деятельности влияют возможности человека.
9. Полномочный орган в каждом аэропорту координирует работу по осуществлению мер контроля в целях безопасности.
10. Под контролем качества понимается обеспечение контроля безопасности, прохождение процедур контроля, обладание всеми профессиональными навыками, необходимыми для выполнения своих обязанностей, и т.д.
11. Аспекты человеческого фактора — это эксплуатационная деятельность и техническое обслуживание в авиации.
12. Актом незаконного вмешательства является уничтожение воздушного судна, находящегося в эксплуатации.
13. Задача рабочей группы выявить уязвимые места беспилотных авиационных систем.
14. Для защиты гражданской авиации от актов незаконного вмешательства привлекаются людские и материальные ресурсы.
15. Зона вылета включает зону регистрации на первом этаже, а на втором этаже — досмотровый центр и залы для ожидания вылета с выходами на посадку.
16. Зоной наивысшего риска является также перрон, зоны сортировки багажа, включая зоны обслуживания воздушных судов.
17. Все аэропорты делятся на контролируруемую и неконтролируемую зоны.
18. Неопознанный багаж не маркирован специальными бирками с указанием имени, фамилии, адреса пассажира, номера рейса, даты вылета (по билету), мобильного телефона и электронного адреса.
19. В самолете были обнаружены запрещенные предметы.
20. Поиск и спасание — это составная часть аэронавигационного обслуживания, заключающаяся в оказании помощи пассажирам и экипажам воздушных судов при возникновении аварийных ситуаций.

5. AIRMISS / AC PROXIMITY

→ READING PRACTICE

→ Study vocabulary

airmiss - опасное сближение самолётов в воздухе

AC proximity - опасное сближение в воздухе

initiating event - инициирующий фактор

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. 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 may be under danger. 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;
- no risk of collision, when no risk of collision has existed;
- risk not determined, when insufficient information was available to determine the risk.

1. Read an article by Andrew Alderson and Ian Birrell from The Sunday Times, 28/10/90.

Concorde and Jumbo in Air Miss over Heathrow

A British Airways Concorde narrowly missed colliding with an Argentine jumbo jet that was taking off from Heathrow, it was revealed yesterday. The two planes, travelling at a combined speed of about 500 mph, came within a mile of each other at a height of 9,000ft above Woodley, near Reading, Berkshire. The captain of the Concorde, Flight BA004 from New York, yesterday filed a near-miss report on the incident, which happened shortly after 10pm on Friday.

A senior BA source said one of the planes probably deviated from its course because of the stormy weather. "There is a great risk in an incident like this because the two planes would have been only seconds from hitting each other," he said.

The incident is to be investigated by the Joint Air Miss Working Group. It will examine statements from pilots and air traffic controllers, along with radar details and data from voice recorders. It is the second time in three years that a British Airways Concorde has narrowly missed disaster above Woodley. The town lies four minutes flying time from Heathrow and underneath the intersection of flights between Gatwick and Heathrow.

In April 1987 a Concorde flight from London to New York missed a twin-engine Otter flying from Birmingham to Gatwick by just 800 yards, also at around 9,000ft. According to one aviation expert, under normal conditions planes flying into Heathrow circle and approach at between 7,000ft and 12,000ft. Aircraft departing generally stay at 6,000ft or less until they have left the approach area. This pattern may, however, have been broken because of the thunderstorms on Friday evening.

A spokesman for British Airways said yesterday that on Friday night the flight had 19 passengers and eight crew on board. "The two aircraft were both under air traffic control and there was no danger. The captain of the Concorde *was told to turn left away from the Argentine jumbo,*" he said.

2. Answer the questions to the text of the article.

1. What happened to an Argentine jumbo jet when it was taking off from Heathrow?
2. What combined speed were they travelling at?
3. Where did they come within a mile of each other?
4. What was the height?
5. What is the reason for an air miss according to a senior BA source?
6. Who will investigate the incident?
7. What happened in April 1987 above Woodley?
8. What is the reason for these two incidents according to one aviation expert?

→ **VOCABULARY PRACTICE**

3. Word building. The word in capital at the end of each of the following sentences can be used to form a word that fits suitably in the blank space. Fill in each blank this way.

1. A British Airways Concorde _____ missed colliding with an Argentine jumbo jet.	NARROW
2. The accident happened _____ after 10 p.m. on Friday.	SHORT
3. One of the planes _____ deviated from its course.	PROBABLE
4. The weather that day was _____.	STORM
5. The Joint Air Miss Working Group will examine _____ from pilots and air traffic controllers.	STATE
6. The town lies underneath the _____ of flights between Gatwick and Heathrow.	INTERSECT
7. Aircraft departing _____ stay at 6,000 ft or less.	GENERAL
8. The two planes were travelling at a _____ speed of about 500 mph.	COMBINE
9. The two planes would have been only seconds from _____ each other.	HIT

5. Match English and Russian equivalents.

1. narrowly missed colliding	a. самолеты, возможно, отклонились от курса.
2. jumbo jet	b. большой риск
3. was revealed	c. изучить заявления
4. at a combined speed of	d. отвернуть влево от
5. came within a mile of each other	e. подать доклад об опасном сближении в полете
6. to file a near-miss report on the incident	f. прошли в миле друг от друга

7. the planes probably deviated from its course	g. данные записи бортовых самописцев
8. because of the stormy weather	h. едва избежали столкновения
9. a great risk	i. было выявлено
10. is to be investigated	j. широкофюзеляжное реактивное ВС
11. to examine statements	k. с суммарной скоростью
12. along with radar details	l. под контролем УВД
13. data from voice recorders	m. из-за штормовой погоды
14. four minutes flying	n. при нормальных условиях
15. under normal conditions	o. вместе с данными радиолокатора
16. because of the thunderstorm	p. должен быть расследован
17. under air traffic control	q. на расстоянии четырех минут полета
18. to turn left away from	r. из-за грозовой деятельности

6. Replace the underlined words with the word of the same or nearly the same meaning that appeared in the text.

1. Two aircraft nearly missed colliding.
2. The incident was discovered yesterday.
3. The incident happened right after 9 a.m. on Tuesday.
4. The planes deviated from its track because of bad weather conditions.
5. There was a great danger in an incident.
6. The Joint Air Miss Working Group examined reports from pilots and air traffic controllers, along with radar details and information from voice recorders.
7. Woodley lies below the intersection of flights between Gatwick and Heathrow.
8. Aircraft departing usually remain at 6,000 feet or less.
9. The pattern was broken due to stormy weather on Saturday.
10. In accordance with reports of Working Group the two planes were only seconds from colliding with each other.

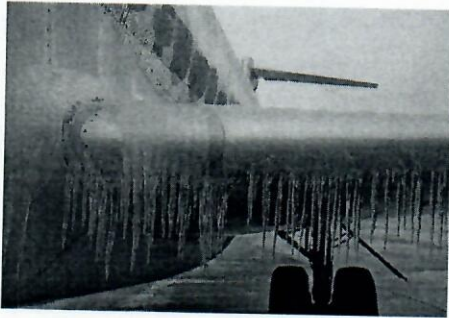
6. DE-ICING / ANTI-ICING

→ READING PRACTICE

→ Study vocabulary:

adverse - неблагоприятный
anti-icing - противообледенительный
de-icing – удаление льда
de-icing fluids - жидкость, раствор
de-icing movements areas - рабочая
площадь аэродрома
evaporated - выпаривать)
harmonized - согласовывать
holdover times - время защитного
действия

reclaimed - утилизировать
reformulated - перерабатывать
RW ends - порог ВПП
subsequent - следующий
supply base - база снабжения
treatment –обработка



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 (De-icing/anti-icing pad), 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.

→ VOCABULARY PRACTICE

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
2. RW end
3. quick
4. refueling
5. minimize

6. after
7. positive
8. to integrate
9. under
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 |

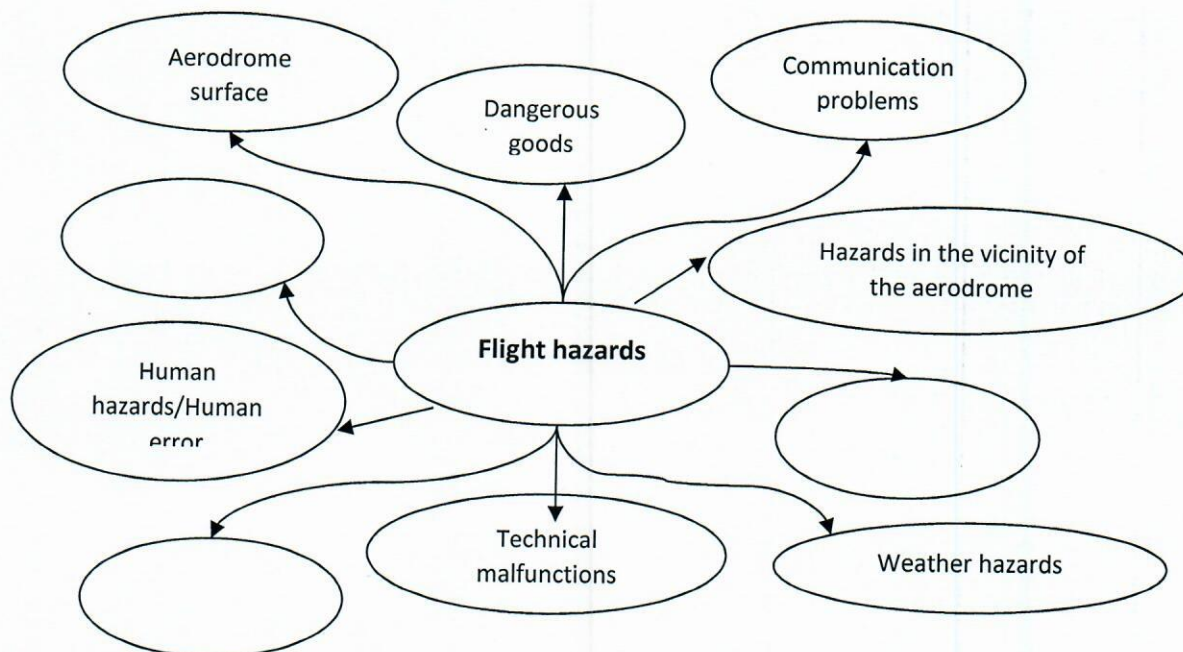
D. Translate into English:

1. Почему так важно, чтобы самолет был очищен от снега и льда перед взлетом? (*use Infinitive*)
2. Крыло и хвостовое оперение самолета имеют определенную форму, благодаря которой создается подъемная сила.
3. Снег или лед изменяют профиль аэродинамических поверхностей, что влечет за собой значительную потерю подъемной силы.
4. Кроме того, увеличивается вес самолета, что также влияет на безопасный взлет и набор высоты.
5. Облив – довольно дорогостоящая процедура, и многие авиакомпании раньше старались по возможности экономить на его проведении.
6. Большинство российских перевозчиков не выпускают самолет в рейс или не предпринимают попытку взлета, если на его критических поверхностях имеются снег или лед.
7. К критическим поверхностям относятся крылья, включая механизацию крыла, хвостовое оперение, фюзеляж, гондолы и воздухозаборники двигателей.
8. Существует три метода очистки воздушного судна от снежно-ледяных отложений: механический, воздушно-тепловой *air-heat* и физико-химический.
9. В чем отличие между терминами «удаление льда» и «противообледенительная обработка»?
10. Если требуется только очистить самолет от снега и льда, проводится обработка в один этап, ее называют удаление льда.
11. Если же сохраняются условия для обледенения (идет снег или переохлажденный дождь), проводится противообледенительная обработка в два этапа, при этом второй этап обеспечивает защиту воздушного судна от обледенения до момента взлета.
12. Существует несколько методов предотвращения обледенения в полете. На большинстве пассажирских самолетов горячий воздух из двигателей

используется для нагрева передней кромки крыла, стабилизатора и воздухозаборников двигателей.

7. FLIGHT OPERATION. HAZARDOUS CONDITIONS IN FLIGHT.

Look at the word map and add any more flight hazards you know. What can you say about flight hazards shown at the map? What situations could cause these hazards?



Answer the following questions:

1. What can cause hazards in the vicinity of the aerodrome?
2. CFIT (controlled flight into terrain) – what are risk factors?
3. Pre-flight inspection is very important for safety. Why?
4. Why are flight planning and pre-flight briefing necessary for avoiding hazards?
5. What could cause engine shut down (failure)?
6. What may be the reasons for aborting take-off (approach)?

How can these conditions (phenomena) affect the operation of the flight?

- deposits on the wings and airframe
- debris on the runway
- black ice
- a rapid thaw
- slush
- sleet
- down draughts
- jet stream activity
- bird strike
- increasing pollution in the world
- terrain hazards
- human hazards
- pilot error
- communication problem

8. FUNCTIONAL ENGLISH
ACTIVE AND PASSIVE FORMS

Make sure you know how to express your thoughts in Passive Voice.

Active & Passive Voices

Verb tense	Active	Passive
<i>Present Simple</i>	V-1 (s), Do, does + V1 I take photos.	am, is, are + V-3 The photos are taken.
<i>Past Simple</i>	V-2, Did+V-1 I took photos.	was, were + V-3 The photos were taken.
<i>Future Simple</i>	will, shall + V-1 I shall take photos.	will, shall be + V-3 The photos will be taken.
<i>Present Continuous</i>	am, is, are + V-ing I'm taking photos.	is, are + being+ V-3 The photos are being taken.
<i>Past Continuous</i>	was, were + V-ing I was taking photos.	was, were + being +V-3 The photos were being taken.
<i>Future Continuous</i>	will, shall + be+V-ing I'll be taking photos.	
<i>Present Perfect</i>	has, have + V-3 I have taken photos.	has, have + been + V-3 The photos have been taken.
<i>Past Perfect</i>	had + V-3 I had taken photos.	had been + V-3 The photos had been taken.
<i>Future Perfect</i>	will have + V-3 I will have taken photos.	will have been V-3 The photos will have been taken.
<i>Present Perfect-Continuous</i>	has, have been V-ing I have been taking photos.	
<i>Past Perfect-Continuous</i>	had been V-ing I had been taking photos.	
<i>Future Perfect-Continuous</i>	will have been V-ing I'll have been taking photos.	
<i>Modal verb</i>	can, must, should +V-1 I can take photos.	can, must be +V-3 The photos can be taken.

Exercise 1

1. Choose the correct verb form. Give your examples (sentences) to prove your choice.

V-СМЫСЛОВОЙ ГЛАГОЛ

V1, V2, V3 - 1-ая, 2-ая, 3-я формы глаголов

V-ing - СМЫСЛОВОЙ ГЛАГОЛ С ОКОНЧАНИЕМ - *ing*

1. Present Indefinite /Simple (Active Voice) in interrogative and negative forms
 - a. *have / has + V3*
 - b. *was / were + V3*
 - c. *do / does + V1*
 - d. *did + V1*
2. Present Continuous (Passive Voice)
 - a. *am / is / are + being + V3*
 - b. *was / were + V3*
 - c. *am / is / are + V-ing*
 - d. *have / has + been + V3*
3. Present Continuous (Active Voice)
 - a. *have / has + V3*
 - b. *do / does + V1*
 - c. *am / is / are + being + v3*
 - d. *am / is / are + V-ing*
4. Past Indefinite / Simple (Active Voice) in interrogative and negative forms
 - a. *have / has + V3*
 - b. *do / does + V1*
 - c. *did + V1*
 - d. *will be + V3*
5. Present Indefinite /Simple (Passive Voice)
 - a. *am / is / are + V3*
 - b. *do / does + V1*
 - c. *am / is / are + V- ing*
 - d. *have / has + been + V3*
6. Present Perfect (Passive Voice)
 - a. *do / does + V1*
 - b. *have / has + V3*
 - c. *had + V3*
 - d. *have / has + been + V3*
7. Future Indefinite /Simple (Active Voice)
 - a. *will + V1*
 - b. *have / has + V3*
 - c. *will be + V3*
 - d. *am / is / are + being + V3*
8. Past Indefinite /Simple (Passive Voice)
 - a. *was / were + V3*
 - b. *was / were + V-ing*

- c. *did + V1*
- d. *was / were*

9. Present Perfect (Active Voice)

- a. *have / has + been + V3*
- b. *have / has + V3*
- c. *was / were + V3*
- d. *had + V3*

10. Future Indefinite / Simple (Passive Voice)

- a. *am / is / are + being + V3*
- b. *will + V1*
- c. *will be + V3*
- d. *will be + V-ing*

2. Choose the appropriate word (words) to complete the sentences:

1. The Swedish DC-9 will pass by you
 - a. *now*
 - b. *in 3 minutes*
 - c. *3 minutes ago*
2. The planes are refuelled before departure
 - a. *last month*
 - b. *usually*
 - c. *next week*
3. We passed point Delta
 - a. *2 minutes ago*
 - b. *in 2 minutes*
 - c. *every day*
4. The message was transmitted
 - a. *now*
 - b. *in 5 minutes*
 - c. *2 minutes ago*
5. Our crew flies abroad
 - a. *every month*
 - b. *last year*
 - c. *next week*
6. ILS system will be put in operation
 - a. *30 minutes ago*
 - b. *soon*
 - c. *sometimes*
7. We are leaving F.L. 190 for F.L. 170
 - a. *often*
 - b. *at the moment*
 - c. *yesterday*
8. We are being hijacked by terrorists
 - a. *in 5 minutes*
 - b. *5 minutes ago*
 - c. *now*
9. We have avoided the prohibited area
 - a. *at 05*
 - b. *already*
 - c. *in 5 minutes*
10. The fire has not been extinguished
 - a. *30 minutes ago*
 - b. *in 30 minutes*
 - c. *yet*

3. Fill in the blanks with the correct form of the verb in the following sentences.

E.g. *Weather.....better now (get)*

Weather is getting better now.

1. We to Geneva yesterday. (*fly*)
2. We normal navigation in 5 minutes. (*resume*)
3. Our departure yesterday. (*delay*)

4. We your message to SAS yet. (*not send*)
5. De-icing procedure in 10 minutes. (*complete*)
6. We to Paris this week. (*be*)
7. The communication can on 183.3. (*establish*)
8. We at the alternate yesterday. (*land*)
9. Rate of descend 5 minutes ago. (*increase*)
10. Our crew to America every month (at present). (*not fly*)

4. Choose the correct form to make a question:

1. you call me again in 3 minutes?
2.the cockpit (*check*) before departure (every day)?
3. Whenyou (*pass*) point Delta? - (Two minutes ago).
4.an incident report (*file*) yet?
5.you (*understand*) my instructions?
6. When.....radar service (*terminate*)?
7. 7.....you (*copy*) your ATC clearance yet?
8. What aircraft.....(*pass*) by you at the moment?
9.the fire (*extinguish*) soon?
- 10.....the plane (*refuel*) now?