САМАРСКИЙ ГОСУДАРСТВЕННЫЙ АЭРОКОСМИЧЕСКИЙ
УНИВЕРСИТЕТ имени академика С.П. КОРОЛЕВА

ОБУЧЕНИЕ ЧТЕНИЮ ЛИТЕРАТУРЫ ПО СПЕЦИАЛЬНОСТИ “СЕРТИФИКАЦИЯ И СТАНДАРТИАЦИЯ В МАШИНОСТРОЕНИИ”

С А М А Р А 2003

МИНИСТЕРСТВО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

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Учебные задания по английскому языку

С А М А Р А 2003

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ОБУЧЕНИЕ ЧТЕНИЮ ЛИТЕРАТУРЫ ПО СПЕЦИАЛЬНОСТИ “СЕРТИФИКАЦИЯ И СТАНДАРТИЗАЦИЯ В МАШИНОСТРОЕНИИ”: Учеб.задания по англ.яз./Самар.гос.аэрокосм.ун-т; Сост. О.В.Яковенко. Самара, 2003. 39с.

Целью учебно-методических указаний является подготовка студентов 2-го курса факультета летательных аппаратов к чтению литературы на английском языке по специальности «Сертификация и стандартизация в машиностроении».

При составлении учебных задания использовались аутентичные тексты из английских и американских источников и из сети Internet.

Подготовлены на кафедре иностранных языков.

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Рецензент Н.П. П о в а л я е в а

Рецензия

Данные методические указания составлены по тематике факультета.

Главное достоинство, по моему мнению, состоит в использовании оригинальных текстов, содержащих специальную терминологию. Тексты достаточно информативны, имеют выверенную лексику. Большой объем текстового материала и разнообразные задания позволяют реализовать принцип индивидуализации обучения.

Данное пособие знакомит студентов с основными понятиями стандартизации, дает возможность овладеть терминологией, подводит студентов к чтению оригинальных научно-технических текстов и их обсуждению.

Рецензент Н.П.Поваляева

Unit 1

Why is International Standardization Needed?

I. Read and memorize the following words.

1. contribute – содействовать, способствовать, делать вклад
2. origin – начало, источник, происхождение
3. establish – основывать, учреждать
4. diverse – иной, отличный
5. identifiable – соответствующий, определенный
6. reference – ссылка, справка, отношение
7. interpenetration – взаимопроникновение
8. claim – требовать, претендовать
9. pervasive – распространенный
10. foster – благоприятствовать, способствовать
11. sustainable – продолжительный, длительный
12. facilitate – облегчать

II. Read the following international words and try to guess their meaning:
Harmonize, rationalize, processing, utilization, liberalization, consensus, biodegradable, prototype, accumulate, infrastructure, criteria

III. Say what parts of speech the following words belong to:
To contribute – contribution – contributor – contributory
To distribute – distribution – distributive – distributor
To utilize – utilization
To see – to foresee – foreseeable
To identify – identical –identification – identifiable
To degrade – degradation – degradable – biodegradable
To establish – established – establishment

IV. Choose the proper Russian equivalents of the English word combinations.

1) export-minded industries	1) в различных отраслях
2) in diverse fields	2) обозримое будущее
3) foreseeable future	3) мощный катализатор
4) biodegradable packaging	4) экспортные отрасли промышленности
5) powerful catalyst	5) продолжительное развитие
6) sustainable development	6) упаковка, разлагающаяся естественным способом

V. Read the text "Why is International Standardization Needed?" Try to understand all details.

Why is International Standardization Needed?

The existence of non-harmonized standards for similar technologies in different countries or regions can contribute to so-called "technical barriers to trade". Export-minded industries have long sensed the need to agree on world standards to help rationalize the international trading process. This was the origin of the establishment of ISO.

International standardization is well-established for many technologies in such diverse fields as information processing and communications, textiles, packaging, distribution of goods, energy production and utilization, shipbuilding, banking and financial services. It will continue to grow in importance for all sectors of industrial activity for the foreseeable future.

The main reasons are:

- Worldwide progress in trade liberalization

  Today's free-market economies increasingly encourage diverse sources of supply and provide opportunities for expanding markets. On the technology side, fair competition needs to be based on identifiable, clearly defined common references that are recognized from one country to the next, and from one region to the other. An industry-wide standard, internationally

recognized, developed by consensus among trading partners, serves as the language of trade.

- Interpenetration of sectors.

No industry in today's world can truly claim to be completely independent of components, products, rules of application, etc., that have been developed in other sectors. Bolts are used in aviation and for agricultural machinery; welding plays a role in mechanical and nuclear engineering, and electronic data processing has penetrated all industries. Environmentally friendly products and processes, and recyclable or biodegradable packaging are pervasive concerns.

- Worldwide communications systems.

The computer industry offers a good example of technology that needs quickly and progressively to be standardized at a global level. Full compatibility among open systems fosters healthy competition among producers, and offers real options to users since it is a powerful catalyst for innovation, improved productivity and cost-cutting.

- Global standards for emerging technologies.

Standardization programs in completely new fields are now being developed. Such fields include advanced materials, the environment, life sciences, urbanization and construction. In the very early stage of new technology development, applications can be imagined but functional prototypes do not exist. Here, the need for standardization is in defining terminology and accumulating databases of quantitative information.

- Developing countries.

Development agencies are increasingly recognizing that a standardization infrastructure is a basic condition for the success of economic policies aimed at achieving sustainable development. Creating such an infrastructure in developing countries is essential for improving productivity, market competitiveness, and export capability.

Industry-wide standardization is a condition existing within a particular industrial sector when the large majority of products or services conform to the same standards.

It results from consensus agreements reached between all economic players in that industrial sector – suppliers, users, and often governments. They agree on specifications and criteria to be applied consistently in the choice and classification of materials, the manufacture of products, and the provision of services. The aim is to facilitate trade, exchange and technology transfer through:

- enhanced product quality and reliability at a reasonable price;
- improved health, safety and environmental protection, and reduction of waste;
- greater compatibility and interoperability of goods and services;
- simplification for improved usability;
- reduction in the number of models, and thus reduction in costs;
- increased distribution efficiency, and ease of maintenance.

Users have more confidence in products and services that conform to International Standards. Assurance of conformity can be provided by manufacturers' declarations, or by audits carried out by independent bodies.

VI. Insert words and word combinations from the text.

1) Today's free-market economies increasingly … diverse sources of supply and …opportunities for expanding markets.
2) An industry-wide … developed by consensus among trading partners, serves as the language of trade.
3) The computer industry … a good example of technology that needs to be standardized at a global level.
4) Standardization programs in completely new fields are now …
5) They agree on … and criteria to be applied consistently in the choice and classification of materials.

Standard, being developed, encourage, specification, provide, offers

VII. Define the tense and the voice of the verb.

1) Bolts are used in aviation and for agricultural machinery.

2) Welding plays a role in mechanical and nuclear engineering.
3) Development agencies are increasingly recognizing that a standardization infrastructure is a basic condition for the success of economic policies.
4) Standardization programs in completely new fields are now being developed.

VIII. Read the following statements and say whether they are true of false:

1) International standardization is well-established for few technologies.
2) On the technology side, fair competition needs to be based on different references that are not recognized from one country to the next.
3) Standardization programs in completely new fields are now being developed.
4) Any industry in today's world can truly claim to be completely independent of components, products, rules of application, that had been developed in other sectors.
5) Development agencies are recognizing that a standardization infrastructure is a basic condition for the success of economic policies aimed at achieving sustainable development.
6) Industry-wide standardization is a condition existing within a particular industrial sector when the large majority of products or services conform to the same standards.

Unit 2

Issue of the Conformity Certificate

I. Read and memorize the following words.

1) conformity – соответствие
2) concern – касаться, иметь отношение
3) provide – обеспечивать, давать
4) attest – удостоверять, свидетельствовать
5) perform - выполнять, совершать
6) consulate – консульство
7) mark – ставить знак, маркировать

8) stick – приклеивать

9) validity – обоснованность, законность

10)determine – определять, устанавливать

11)assign – назначать, определять

II. Read and translate the following word combinations:

Certification license, certification body, maintenance manual, advertising papers, conformity certificate, validity term, degree of protection

III. Say what parts of speech the following words belong to:

Conform – conformity – conformist – conformable

certify – certificate – certification

apply – applicant – application – applicable

protect – protection – protective – protector

false – falsify – falsification

supply – supplier

maintain – maintenance – maintainable

valid – validity - validate

IV. Read and translate the text “Issue of the conformity certificate”. Use a dictionary if necessary.

Issue of the Conformity Certificate

The conformity certificate is issued by the certification body on the basis of the positive results of:

- The certification tests;
- Process quality audit;
- Applicant’s document review.

The conformity certificate should be registered by the certification body and given out to the applicant.

The information concerning all the issued conformity certificates and their numbers are introduced into the state register.

The copies of the conformity certificates are kept by the certification body.

If needed, every copy of the conformity certificate is provided by the social protection mark which has several degrees of protection against the falsification.

The certification body attests the certificate copies according to the applicant's request.

Attesting of the copies may be performed by the notary of the country of the supplier as well as at the consulate of Russia.

In case of need the conformity certificate may be given out to everybody on presentation of writing request made by the owner of the certificate.

The certified products must be marked by the mark of conformity according to the law of Russian Federation "On certification of the products and services".

The position and method of the marketing are indicated in the certification license.

Grafical structure of the mark of conformity should be performed according to the Russian standard – Gost R 50460 – 92.

The certification body for automobile units and components sells its own mark of conformity.

The importer using this mark should stick it to the products certificated.

Every unit and part of certified products, as well as container, package and shipping documents, including the maintenance manual are marked by means of the stamping.

The mark of conformity may be used in the advertising papers and other document based on the license.

Simultaneously the conformity certificate and the certification license are given out to the applicant by the certification body.

The mark of conformity may be used by the applicant during the validity term of the certificate determing the license period.

According to the license the manufacturer is obliged to provide conformity of all the products, assigned by the conformity mark, to the normative documents and the sample tested.

V. Insert the words and word combinations from the text.

1) The conformity certificate should be … by the certification body and … to the applicant.
2) The certification body … the certificate copies according to the applicant's request.
3) The position and method of the marking are indicated in … .
4) The mark of … may be used in the advertising papers and other documents based on the license.
5) According to the license the manufacturer is obliged to provide conformity of all the products, assigned by the conformity mark, to the normative documents and the sample tested.

Assigned, registered, conformity, given out, the certification license, attests

V. Complete the following sentences:

1) The information concerning all the issued conformity certificates and their numbers are …
2) If needed, every copy of the conformity certificate is provided by …
3) Attesting of the copies may be performed by …
4) The position and method of the marking are indicated in …
5) Every unit and part of certified products, as well as container, package and shipping documents, including the maintenance manual are marked by …

VI. Read the following statements and say whether they are true or false.

1) The conformity certificate is issued by the certification body only on the basis of the positive results of applicant's document review.
2) The information concerning all the issued conformity certificates and their numbers are introduced into the state register.
3) The copies of the conformity certificates are kept by the applicant.

4) The certification body attests the certificate copies according to the applicant's request.
5) The mark of conformity may be used by the applicant during the unlimited period.

VII. Answer the following questions:

1) Who is the conformity certificate issued by?
2) What is every copy of the conformity provided by?
3) Where are the position and method of the marking indicated?
4) What should be marked by means of stamping?
5) How long may the mark of conformity be used?

Unit 3

Russian National Standards

I. Read and memorize the following words:

1) to ensure – обеспечивать, гарантировать, ручаться
2) to flood – переполнять, хлынуть,
3) breakup – развал, распад
4) mandatory – принудительный, обязательный
5) voluntary - добровольный
6) certification broker – посредник в оказании сертификационных услуг
7) responsive – чувствительный
8) embrace – охватывать, включать, заключать в себе
9) conformity – соответствие
10) manual – руководство
11) pertain – относиться, принадлежать
12) comply - подчиняться

II. Read the following international words and try to guess their meaning:

Regime/ /, standard / /,

Unique / /, importer / /,

Procedure / /, personnel / /

III. Find the proper English equivalents of the Russian word combinations:

Принудительный	voluntary
Добровольный	comply
Чувствительный	conformity
Соответствие	mandatory
Руководство	responsive
Подчиняться	manual

IV. Read the text “Russian National Standards” and say how certification procedures are governed.

Russian National Standards

GOST R Certification. National certification regime (officially called GOST R Certification System, where GOST = State standards; R = Russia) was introduced in Russia in the early 1990s to protect public health and to ensure safety of imported products that flooded local markets after the breakup of the Soviet Union. The System includes over 10 mandatory and more than 60 voluntary certification programs for products, processes, services, and quality management systems.

Industry-specific Certification Programs. More than 10 organizations and agencies of the federal government operate their own mandatory and voluntary certification programs.

GOST R Certification in Construction. As an integral part of the national certification system, GOST R Certification System in Construction (CSC) is designed to preserve public health, safety, and welfare in the built environment. The scope of the CSC program extends to certifiers of building products, materials, equipment, processes, personnel, services, and quality management systems.

SNIP Certification Services. SNIP has a unique place in the Russian certification market. Acting as a certification broker for a great variety of local certification bodies and testing laboratories, SNIP always finds solutions that are cost effective and are responsive to importer's objectives in certification. SNIP certification services embrace a wide range of certification programs accredited by Russia's Gosstandart and administered by different government agencies, including: agriculture, construction, consumer goods, environmental protection, fire safety.

Certification Standards. Conformity assessment, accreditation, and certification procedures are governed by the set of regulations that include federal laws, GOST R standards, manuals, guides to recommended practices, and regulatory documents of government agencies involved in certification-related activities.

The fundamental regulatory document for GOST R Certification System is GOST R 51000 standard developed by Gosstandart. The standard is based on ISO/IEC and EN 45000 and consists of individual documents pertaining to accreditation procedures, requirements for certification bodies and testing laboratories, certification of personnel, etc. Industry-specific certification programs have their own regulatory documents developed by the National Certification Bodies. Unlike GOST R 51000 standards, the industry-specific certification regulations may not comply with ISO/IEC standards.

V. Insert the words from the text:

1) National certification regime was introduced in Russia … public health and to ensure safety of imported products.
2) The System … over 10 mandatory and more than 60 voluntary certification programs.
3) Acting as … for a great variety of local certification bodies, SNIP always finds solutions that are … to importer's objectives in certification.
4) SNIP certification services embrace … of certification programs accredited by Russia's Gosstandart.
5) The standard consists of individual documents … to accreditation procedures.

VI. Read the following statements and say whether they are true or false:

1) National certification regime was introduced in Russia in mid 70s to ensure safety of imported products.
2) The scope of the CSC program extends to certifiers of services only.
3) SNIP certification services embrace a wide range of certification programs accredited by Russia's Gosstandart.
4) Conformity assessment, accreditation, and certification procedures are governed by regulatory documents.
5) The standard consists of individual documents pertaining to accreditation procedures requirements for certification bodies and testing laboratories, certification of personnel, etc.
6) The industry-specific certification regulations don't comply with ISO/IEC standards.

VII. Answer the following questions.:

1) When was National certification regime introduced? What for?
2) What does Certification System include?
3) What is the function of SNIP?
4) What does SNIP embrace?
5) What are conformity assessment accreditation and certification governed by?

VIII. Ask your friend whether:

1) GOST R was introduced to protect public health and to ensure safety of imported products.
2) The system includes more than 60 voluntary certification programs.
3) The scope of CSC program extends to certifiers of building products, materials, equipment, etc.
4) The fundamental regulatory document for GOST R Certification System is GOST R 51000 standard developed by Gosstandart.

Unit 4

Customer-Driven Quality Standards

I. Read and memorize the following words.

1) Reliable - надежный
2) perception – восприятие, понимание
3) set – устанавливать
4) demand – требование
5) consistent – последовательный
6) conformance – соответствие
7) inherent – присущий, неотъемлемый
8) implication – смысл, значение
9) entail – влечь за собой, вызывать
10) assess – оценивать

II. Say what parts of speech the following words belong to:

Assess – assessment – assessable – assessor

Rely – reliable – reliability – reliance

Perceptive – perception – perceptible – perceptivity

Accept – acceptable – acceptability – acceptance

Consistent – consistently – consistency

Imply – implicit – implication

Conform – conformation - conformity

III. Choose the proper Russian equivalents of the English words:

Reliable	присущий
Perception	соответствие
Inherent	размер, величина
Conformance	надежный

Dimension	вызывать
Entail	понимание
Ensure	обеспечивать

IV. Read the text “Customer-Driven Quality Standards” and say how the quality of a product or service is defined. Try to understand all the details.

Customer-Driven Quality Standards

What this says is that “your product isn’t reliable unless the customer says it’s reliable,” and “your service isn’t fast unless the customer says it’s fast.” What this means is that the customer’s perception of quality must be taken into account in setting acceptable quality levels. Translating customer quality demands into specifications requires marketing (or product development) to accurately assess what the customer wants, and requires product designers to develop a product (or service) that can be produced to consistently achieve that quality level. This in turn, requires that we have an operational definition of quality, an understanding of its dimensions, and methodologies for including the voice of the customer in those specifications. The quality of a product or service may be defined in the quality of its design and the quality of its conformance to that design. Design quality refers to the inherent value of the product in the marketplace and is thus a strategic decision for the firm.

Conformance quality refers to the degree to which the product or service design specifications are met. It, too, has strategic implications, but the execution of the activities involved in achieving conformance are of a tactical day-to-day nature. It should be evident that a product or service can have high design quality but low conformance quality, and vice versa.

The operations function and the quality organization within the firm are primarily concerned with quality of conformance. Achieving all the quality specifications is typically the responsibility of manufacturing management, where a product is involved, and branch operations management in a service industry.

Both quality of design and quality of conformance should provide products that meet the customer’s objectives for those products. This is often termed the product’s

fitness for use, and it entails identifying the dimensions of the product (or service) that the customer wants and developing a quality control program to ensure these dimensions are met.

V. Insert the following words and word combinations.

1) The customer's perception of quality must be … in setting acceptable quality levels.
2) Translating customer … into … requires marketing to accurately assess what the customer wants.
3) Design quality refers to … of the product in the marketplace and is thus a strategic decision for the firm.
4) It should be evident that a product or service can have high design quality but … , and vice versa.
5) Achieving all … is typically the responsibility of manufacturing management.
6) Both quality of design and quality of conformance should provide products that meet the customer's for those products.

Specifications, taken into account, quality demands, objectives, the inherent value, the quality specifications, low conformance quality

VI. Match the beginning and the end of the sentences:

1) Your product isn't reliable…	1) in the quality of its design and the quality of its conformance to that design.
2) Translating customer quality demands into specifications requires…	2) the inherent value of the product in the marketplace.
3) The quality of a product or service may be defined…	3) marketing to accurately assess what the customer wants.
4) Design quality refers to …	4) the degree to which the product or service design specifications are met.
5) Conformance quality refers to …	5) unless the customer says it's reliable.

VII. Say whether the following statements are true or false:

1) You product is reliable if you say it's reliable.
2) The customer's perception of quality must be taken into account in setting acceptable quality levels.
3) There is no operational definition of quality.
4) The operation function and the quality organization within the firm are not concerned with quality of conformance.
5) Both quality of design and quality of conformance should provide products that meet specification requirements.

VIII. Answer the following questions:

1) What does translating customer quality demands into specifications require?
2) How may the quality of a product be defined?
3) What does design quality refer to?
4) What does conformance quality refer to?
5) What are the operations function and the quality organization concerned with?
6) What should quality of design and conformance provide?

Unit 5

Quality Function Deployment

I. Read and memorize the following words:

1) deployment – развертывание, размещение
2) credit – приписывать что-л. кому-л.
3) customer – покупатель, клиент
4) superior – превосходный
5) consumer – потребитель
6) preference – предпочтение
7) attribute – свойство, характерный признак (качество)
8) survey – обзор, отчет об обследовании
9) rate – оценивать, определять

10) evaluate – оценивать

11) jointly – совместно, сообща

12) encourage – поощрять, способствовать

II. Say what parts of speech the following words belong to:

Deploy – deployment

Function – functional – interfunctional

Prefer – preferences

Improve – improvement

Relative – relativity – relatively – relation

Compete – competition – competitor

III. Read and translate the text "Quality Function Deployment" and say what is the aim of building a house of quality matrix.

Quality Function Deployment

One approach to getting the voice of the customer into the design specifications of a product is quality function deployment (QFD). This approach, which uses interfunctional teams from marketing, design engineering, and manufacturing, has been credited by Toyota Motor Corporation for reducing the costs on its cars by more than 60 percent by significantly shortening design times.

The QFD process begins with studying and listening to customers to determine the characteristics of a superior product. Through market research, the consumers' product needs and preferences are defined and broken down into categories called customer attributes. For example, an automobile manufacture would like to improve the design of a car door. Through customer surveys and interviews, it determines that two important customer attributes desired in a car door are that it "stays open on a hill" and is "easy to close from the outside". After the customer attributes are defined, they are weighted based on their relative importance to the customer. Next, the consumer is asked to compare and rate the company's products with the products of competitors. This process helps the company to determine the product characteristics

that are important to the consumer and to evaluate its product in relation to others. The end result is a better understanding and focus on product characteristics that require improvement.

Customer attribute information forms the basis for a matrix called the house of quality. By building a house of quality matrix, the cross-functional QFD team can use customer feedback to make engineering, marketing, and design decisions. The matrix helps the team to translate customer attribute information into concrete operating or engineering goals. The important product characteristics and goals for improvement are jointly agreed on and detailed in the house. This process encourages the different departments to work closely together and results in a better understanding of one another's goals and issues. However, the most important benefit of the house of quality is that it helps the team to focus on building a product that satisfies customers.

IV. Insert the following words from the text.

1) This approach has been credited by Toyota Motor Corporation for … the costs on its cars by more than 60 percent by significantly shortening design times.
2) The QFD process begins with studying and listening to customers to … the characteristics of a superior product.
3) Through market …, the consumers' product needs and … are defined and broken down into categories called customer attributes.
4) Through customer … and interviews, it determines that two important customer … desired in a car door are that it "stays open on a hill" and "easy to close from the outside".
5) After the customer attributes are …, they are weighted based on their relative importance to the customer.
6) This process helps the company to determine the product characteristics that are important to the consumer and to … its product in relation to others.

Determine, evaluate, reducing, defined, preferences, surveys, research, attributes

V. Match the beginning and the end of the sentences:

1) One approach to getting the voice of the customer into the design specifications of a product is…	1) to determine the characteristics of a superior product.
2) The QFD process begins with studying and listening to customers…	2) jointly agreed on and detailed in the house.
3) The consumer is asked to compare and rate the company's products…	3) quality function deployment.
4) The end result is a better understanding and focus on…	4) with the products of competitors.
5) The important product characteristics and goals for improvement are…	5) on product characteristics that require improvement.

VI. Say whether the following statements are true or false

1) Modern materials have been credited by Toyota Motor Corporation for reducing the costs on its cars by more than 60 percent.
2) The QFD process begins with improvement of manufacturing.
3) Through market research, the consumers' product needs and preferences are defined and broken down into categories.
4) The consumer never compares the company's products with the products of competitors.
5) The most important benefit of the house of quality is that it helps to work closely together.

VII. Answer the following questions:

1) What did Toyota Motor Corporation do to get the voice of the customer into the design specifications?
2) What does the QFD begin with?
3) How are the consumers' product needs defined?

4) Why are the consumers asked to compare the company's products with the products of competitors?
5) What's the end result?
6) What does the matrix help the team to do?

Unit 6
Prevention Orientation

I. Read and memorize the following words:

1) Homily – проповедь, поучение
2) genesis – происхождение, возникновение
3) incentive – побудительная причина
4) discrepancy – разногласие, противоречие
5) bug – технический дефект
6) feverish – лихорадочный
7) conclude – делать вывод, заключать
8) aware – сознающий
9) override (overrode, overridden) – отвергать, не принимать во внимание

II. Say what parts of speech the following words belong to:

Prevent – prevention – preventive

Count – counter – recount

Bug – bugging – debugging

Fever – feverish

Avail – available – availability

Employ – employer – employee – employment

Reflect – reflection – reflective

III. Pronounce the following international words and try to guess their meaning:

Ounce / /, review / /, mantra / /

IV. Read the text “Prevention Orientation” and say how Martin Company managed to achieve high quality. Try to understand all the details.

Prevention Orientation

“An ounce of prevention is worth a pound of cure”. This ancient homily captures the essence of the prevention orientation, and indeed, the contemporary philosophy of TQM. Later mantras include: DIRTFT (Do It Right The First Time) and “You can’t inspect-in quality”.

Zero defects had its genesis at the Martin Company in 1961-62. At the time, Martin was building Pershing missiles for the U.S. Army. Their quality, though generally good, was achieved only through massive inspection. Incentives were offered to workers to lower the defect rate still further; together with even more intensive inspection and testing, these efforts led, on December 13, 1961, to the delivery of a Pershing missile to Cape Canaveral with zero discrepancies.

A defect-free missile could therefore be made, although it was likely to require extensive debugging before shipment. A month later, Martin’s general manager in Orlando, Florida, accepted a request from the U.S. Army’s missile command to deliver the first field Pershing one month ahead of schedule. He went even further – he promised that the missile would be perfect, with no hardware problems, no document errors, and all equipment set up and fully operational 10 days after delivery (the norm was 90 days or more). Two months of feverish activity followed. Since little time was available for the usual inspection and after-the-fact correction of errors, all employees were asked to contribute to building the missile exactly right the first time. The result was still a surprise: In February 1962 a perfect missile was delivered. It arrived on time and was fully operational in less than 24 hours.

This experience was an eye-opener for Martin. After careful review, management concluded that the project’s success was primarily a reflection of its own changed attitude: “The reason behind the lack of perfection was simply that perfection had not been expected. The one time management demanded perfection, it happened!” Similar reasoning suggested a need to focus on workers’ motivation and awareness. Of the three most common cause of worker errors – lack of knowledge, lack of

proper facilities, and lack of attention - management concluded that the last had been least often addressed. It set out to design a program whose overriding goal was to "promote a constant, conscious desire to do a job (any job) right the first time." The resulting program was called zero defects.

V. Insert the words from the text.

1) Their … was achieved only through massive … .
2) A … missile could therefore be made, although it was likely to require extensive … before shipment.
3) Since little time was … for the usual inspection and after-the-fact correction of errors, all … were asked to contribute to building the missile exactly right the first time.
4) The reason behind the lack of … was simply that perfection had not been expected.
5) Of the three most common causes of worker errors – lack of knowledge, lack of proper … , and lack of attention – management concluded that the last had been least often addressed.

Quality, facilities, inspection, perfection, defect-free, debugging, available, employees.

VI. Match the beginning and the end of the sentence.

1) An ounce of prevention is …	1) worth a pound of cure.
2) Incentives were offered to workers to …	2) to focus on workers' motivation and awareness.
3) It was likely to require…	3) lower the defect rate still further.
4) All employees were asked…	4) extensive debugging before shipment.
5) Management concluded that…	5) the project's success was primarily a reflection of its own changed attitude.

6) Similar reasoning suggested a need…
6) to contribute to building the missile exactly right the first time.

VII. Say whether the following statements are true or false:

1) The quality of Pershing missiles was rather bad.
2) A defect-free missile couldn't be made.
3) A request was accepted to deliver the first field Pershing one month ahead of schedule.
4) The manager couldn't promise that the missile would be perfect.
5) All employees were asked to contribute to building the missile exactly right the first time.
6) The most common causes of worker errors were lack of knowledge, lack of inspection and lack of proper materials.

VIII. Answer the following questions:

1) How was the quality at the Martin Company achieved?
2) What did the workers do to lower the defect rate still further?
3) How did Martin's general manager satisfy U.S. Army's requirements?
4) What were all employees asked to do?
5) What were the most common causes of worker errors?

Unit 7

Quality at the Source

I. Read and memorize the following words:

1) adversarial – неблагополучный, вредный
2) extend – распространяться
3) supplier – поставщик
4) host – множество
5) commitment – обязательство
6) back up – поддерживать

7) imbed (embed) – вделывать, врезаться
8) accomplish – выполнять, завершать
9) deliverable – поставка

II. Say what part of speech the following words belong to:

Adverse – adversary – adversarial – adversity

Supply – supplier –supplies

Commit – commitment

Accomplish – accomplished – accomplishment

Improve – improvement

Deliver – delivery – deliverance – deliverable

III. Read the text "Quality at the Source" and say what continuous improvement means.

Quality at the Source

Quality at the source means that each worker is a quality inspector for his or her own work. This view changes the often adversarial practice of having a QC inspector, typically from the QC department, making decisions about good or bad quality. This philosophy, as currently practiced, extends beyond the worker to include the work group, all departments, and to the suppliers of parts and services to the organization.

To make quality at the source effective requires a host of philosophical changes and actions on the part of all members of the organization. As usual, it starts with top management's commitment to empower workers to make quality decision. This commitment must be backed up by training in the tools to both prevent defects and to fix them when they occur. It also requires a change in role of the quality control department from that of being a police officer to that of being a provider of technical assistance in designing the methods and tools to prevent defects. Relative to the latter point, imbedding inspections within the process itself can be used not only to identify defects but also to correct them before the product goes to the next stage of production. The development of simple methods used by the operator to accomplish this is a major feature of the continuous improvement approach developed by

Japanese quality expert, Shigeo Shingo. These simple methods are called poka-yoke (Japanese for "fail-safe") which Shingo developed as part of the Toyota just-in-time system.

Continuous Improvement has a general meaning and a specific TQM meaning. Its general meaning is an ongoing effort to simply make improvements in every part of the organization relative to all of its deliverables to its customers. Its more specific meaning focuses on continual improvement in the quality of the processes by which work is accomplished. Thus, the phrase continuous process improvement often defines its purpose in the context of TQM.

IV. Insert the words from the text.

1) This philosophy, as currently practiced, … beyond the worker to include the work group, all departments, and to the suppliers of parts and services to the organization.
2) It starts with the management's … to empower workers to make … decision.
3) It also requires a change in role of the … department from that of being a police officer to that of being a provider of technical assistance in designing the methods and tools to … defects.
4) The development of simple methods used by the operator to … this is a major feature of the continuous improvement approach developed by Japanese quality expert.
5) Its general meaning is an ongoing effort to simply make … in every part of the organization relative to all of its … to its customers.

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accomplish, deliverables, extends, improvements, suppliers, quality, prevent, commitment, quality control.

V. Match the beginning and the end of the sentence.

1) Quality at the source means that…	1) but also to correct them before the product goes to the best stage of production.
2) To make quality at the source	

effective requires…

3) This commitment must be backed up by training in the tools to both…
4) Imbedding inspections within the process itself can be used not only to identify defects…
5) The phrase continuous process improvement often defines…

2) its purpose in the context of TQM.
3) each worker is a quality inspector for his or her own work.
4) prevent defects and to fix them when they occur.
5) a host of philosophical changes and actions on the part of all members of the organization.

VI. Say whether the following statements are true or false:

1) Quality at the source means that there should be a Quality Control inspector from the QC department.
2) To make quality at the source effective requires a host of philosophical changes and actions on the part of all members of the organization.
3) Role of the quality control department is to be a police officer.
4) Imbedding inspections within the process itself can be used to correct defects before the product goes to the next stage of production.
5) General meaning of Continuous Improvement focuses on continual improvement in the quality of the process by which work is accomplished.

VII. Ask your friend whether:

1) Quality at the source philosophy extends beyond the worker to include the work group, all departments, and to the suppliers of parts and services to the organization.
2) To make quality at the source effective requires a host of philosophical changes and actions on the part of all members of the organization.
3) Top management commitment to empower workers to make quality decisions must be backed up by training in the tools to both prevent defects and to fix them when they occur.

4) Imbedding inspections within the process itself can be used to identify defects.
5) The development of simple methods used by the operator is a major feature of the continuous improvement approach developed by Japanese quality expert.

VIII. Answer the following questions

1) What does Quality at the source mean?
2) What does to makes quality at the source effective require?
3) What must top management's commitment be backed up by?
4) What can imbedding inspections within the process itself be used for?
5) What does continuous improvement mean?

Unit 8

Model Aviation Regulations

I. Read and memorize the following words:

1) rate – оценивать, определять, устанавливать
2) score – очко, балл
3) acceptable – приемлемый, допустимый
4) well-being - благополучие
5) restriction – ограничение
6) severe – строгий, суровый
7) ban – запрещать
8) oversight – надзор
9) establish – устанавливать
10) signatory – сторона, подписавшая договор
11) implementation – приведение в исполнение
12) comprehensiveness – понимание
13) assessment – оценка
14) cohesive – связующий
15) enforce – принуждать, заставлять

II. Choose the proper Russian equivalents of the English words:

Signatory	Надзор
Ban	Заключение
Cohesive	Устанавливать
Conclusion	Запрещать
Establish	Связующий
Oversight	Сторона, подписавшая договор
guidance	Руководство

III. Match up the words which have similar meaning:

To restrict	watchfulness
To ban	to set up
Oversight	to forbid
To establish	to limit
Regulation	rule

IV. Read the text "Model aviation regulations" and say why we need aviation standards and regulations.

Model Aviation Regulations

Since 1992 the Federal Aviation Administration (FAA) has been conducting what is called country audits under the International Aviation Safety Assessment (IASA) program, placing countries operating in and out of the US into a rating system which gives them scores of one or two (one is acceptable and two is not). The FAA ratings, in some instances, have had a significant effect on the economic well-being of national airlines and/or the associated country, with restrictions being placed on services and, in more severe situations, the banning of services to the US. In such cases, the FAA's position has been that many national civil aviation authorities have been unable, or in some cases unwilling, to provide the minimum regulatory oversight required by the International Civil Aviation Organization (ICAO).

ICAO has established minimum aviation standards and recommended practices for its individual signatory countries, to be used as a guide in the development and implementation of their own laws, regulations and guidance material. However, the FAA is of the opinion that the ICAO guidelines lack the degree of detail and comprehensiveness needed to be used by a country in the development of its stand-alone civil aviation regulations. This conclusion seemed to be supported by both ICAO and FAA safety surveys, which have shown that the structure of a state's civil aviation law and regulations is one of the more crucial factors when an unfavourable assessment is arrived at.

Until recently, there has been no cohesive set of model aviation safety laws, regulations and guidance materials. Many nations have rightly viewed the Federal Aviation Regulations (FARs) as unnecessarily complicated, difficult to enforce and not readily translatable into other languages. The Joint Aviation Requirements (JARs) are viewed by others as even less enforceable than the FAR's.

In an effort to design a complete set of useable laws, regulations and guidance documents, the FAA commissioned a team of experts and developed what they call their "model aviation regulatory documents".

The FAA developed this document as one of its contributions to assist the many ICAO regional safety oversight and harmonization projects. Past experience had indicated that the availability of this material at the onset of a project can save two years of project time as well as the associated expenses. The model regulations were developed using ICAO material, comparisons of the FARs and the JARs, and in some instances, Canadian and Australian regulatory material as well. The model addresses flight operations and continuing airworthiness of aircraft. Where possible, each model regulation is cross-referenced to the applicable ICAO, FAR and JAR element.

V. Insert the proper words from the text.

1) The FAA ratings have had a significant effect on the economic … of national airlines.
2) The FAA's position has been that many national civil aviation … have been unable to provide minimum … required by ICAO.

3) ICAO has … minimum aviation standards and recommended practices for individual … countries to be used as a guide.
4) The FAA is of the opinion that the ICAO guidelines lack the degree of detail and … needed to be used by a country in the development of its stand-alone civil aviation … .

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comprehensiveness, well-being, regulations, authorities, oversight, established, signatory)

VI. Say whether the following statements are true or false:

1) The FAA ratings have had a significant effect on the economic well-being of national airlines.
2) Many national civil aviation authorities have been able to provide the minimum regulatory oversight required by International Civil Aviation Organization (ICAO).
3) ICAO has established minimum aviation standards.
4) FAA is of the opinion that the ICAO guidelines have enough comprehensiveness needed to be used by a country in the development of its stand-alone civil aviation regulations.
5) The structure of a state's civil aviation law and regulations is one of the more crucial factors when an unfavourable assessment is arrived at.
6) Until recently there has been cohesive set of model aviation safety laws, regulations and guidance materials.

VII. Match the beginning and the end of the sentences.

1) The FAA ratings have had…	1) to provide the minimum regulatory oversight required by the ICAO.
2) Many national civil aviation authorities have been unable, or in same cases unwilling…	2) lack the degree of detail and comprehensiveness needed to be used by a country.
3) The FAA is of the opinion that the ICAO guidelines …	3) commissioned a team of experts and

4) The structure of a state's civil aviation law and regulations…
5) In an effort to design a complete set of usable laws, regulations and guidance documents, the FAA

developed a model aviation regulatory documents.
4) a significant effect on the economic well-being of national airlines.
5) is one of the more crucial factors when an unfavourable assessment is arrived at.

VIII. Answer the following questions:

1) What program has FAA been conducting since 1992?
2) In what way have the FAA ratings had an effect on the economic well-being?
3) What has the FAA's position been?
4) What has ICAO established?
5) What's the opinion of the FAA about ICAO?
6) What did the FAA do in an effort to design a complete set of useable laws?

Unit 9

VIP Aircraft Interiors Certification and Maintenance

I. Read and memorize the following words:

1) ceiling – потолок
2) set (set, set) – устанавливать
3) carry out – выполнять, осуществлять
4) accompany - сопровождать
5) vendor – продавец
6) furnishings – оборудование
7) refurbishment – восстановление
8) warranty – гарантия

9) compliance – согласие, соответствие

10) longevity – долговечность

11) strive (strove, striven) – стараться, прилагать усилия

II. Say what parts of speech the following words belong to:

Produce – product – production – productivity – producer

Regular – regulate – regulation – regularity

Manufacture – manufacturer – manufacturing

Furbish – refurbish – refurbishment

Comply – compliance

Long – longevous – longevity

III. Read the text "VIP Aircraft Interiors Certification and Maintenance" and say what the most important factor of company success and longevity is.

VIP Aircraft Interiors Certification and Maintenance

The certification of VIP aircraft interiors design, production and maintenance procedures and their conformity to aviation rules and regulations and type certificates is very important for all VIP aircraft interiors designers and manufacturers, and InterAMI Interior is no exception. The certification of VIP aircraft interiors and their elements – ceiling and wall panels, leather armchairs, electronic equipment of passenger cabin, etc. – is done in accordance with procedures set by aviation rules AR-21 and federal aviation rules FAR-25 for the certification of the aircraft interiors as a part of the aircraft. The certification procedures are carried out in close cooperation with aircraft manufacturers and type certificate holders.

The design and manufacturing of VIP interior of Yak-40 aircraft is accompanied with FAA conformity certificates: thus, all vendor items and thermoplastic materials used in aircraft furnishings have FAA certificates, all passengers seats have TSO C127a certification. All interior elements are tested by Russian Federal Institute of Aviation Materials Science.

InterAMI Interior has certified procedures for interior repairs and refurbishment (replacement), installation and modification as well as warranty and post-warranty interior servicing and maintenance.

The quality assurance system for all stages of design, development, production, assembly and maintenance of VIP aircraft interiors was created and adopted by InterAMI Interior in 2000. The main purpose of this system was to systematize all quality requirements to all stages of aircraft interior design and manufacturing process. The compliance of our quality assurance system with international standard ISO 9001-94 is confirmed by certificate S2000.608 issued by TNO Certification. VIP interior of Yak-40 aircraft was created and installed in full accordance with this certified quality assurance system.

High quality of products and services is the most important factor of company success and longevity, and it has never been underestimated by InterAMI Interior. From the day of its foundation InterAMI Interior team strived to satisfy and exceed the most demanding needs of customers, providing even more than they could expect from VIP aircraft interior. The modern vehicle interior, and especially aircraft interior, not only must have aesthetical and functional value, but also possess a number of special qualities. All materials and parts must be environment-friendly, durable, fire safe and noise-absorbing to ensure the comfort and safety of passengers during their travel. One of the most efficient methods of quality assurance is defect prevention at all stages of technological process and use of aviation-certified materials and parts.

VIP aircraft interiors installation, maintenance, repairs and replacement also must be carried out quickly and efficiently and thus are subject to quality assurance system guidelines.

IV. Match the beginning and the end of the sentences.

1) The certification of VIP aircraft interiors and their elements…	1) is accompanied with FAA conformity certificated
2) The design and manufacturing of VIP interior of Yak-40 aircraft	2) defect prevention at all stages of technological process.

…

3) InterAMI Interior has certified…
4) The compliance of our quality assurance system with international standard ISO 9001-94…
5) One of the most efficient methods of quality assurance is…

3) is done with accordance with procedures set by aviation.
4) procedures for interior repairs and refurbishment.
5) is confirmed by certificate S2000.608 issued by TNO Certification.

V. Insert the proper words from the text:

1) The certification of VIP aircraft interiors design, production and maintenance procedures and their … to aviation rules is very important for aircraft designer.
2) The certificate procedures are … in close cooperation with aircraft manufacturers.
3) The main purpose of this system was to systematize all … .
4) … of our quality assurance system with international standard ISO is confirmed by certificate S 2000.608.
5) One of the most efficient methods of quality assurance is … at all stages of technological process.

Carried out, defect prevention, conformity, the compliance, quality requirements.

VI. Say whether the following statements are true or false.

1) The certification of VIP aircraft interiors and their elements is done in accordance with procedures set by International Aviation Rules.
2) The design and manufacturing of VIP interior of Yak-40 aircraft is accompanied with FAA conformity certificates.
3) InterAMI Interior has certified procedures for both interior and exterior repairs and refurbishment, installation and modification.

4) The main purpose of the quality assurance system was to inspect all quality requirements to all stages of aircraft interior design and manufacturing process.
5) VIP interior of Yak-40 aircraft was created and installed in accordance with the certified quality assurance system.
6) The modern vehicle interior must have only aesthetical and functional value.

VII. Answer the following questions:

1) How is the certification of VIP aircraft interiors and their elements done?
2) What certificates do thermoplastic materials used in aircraft furnishings have?
3) What has InterAMI certified?
4) What's the main purpose of the quality assurance system?
5) Does our quality assurance system comply with international standard ISO?
6) What special qualities must the modern vehicle interior possess?

Unit 10

VIP Aircraft Interiors Manufacturing Modern Production Technologies

I. Read and memorize the following words:

1) impose – налагать, выдвигать
2) precise – точный, определенный, тщательный
3) strive (strove, striven) – стараться, прилагать усилия
4) exceed – превышать, превосходить
5) durable – прочный, долговременный
6) utmost – предельный, полный
7) milling – фрезерование
8) trim – подрезать, подравнивать
9) implement – исполнять
10) commitment – обязательство

II. Say what part of speech the following words belong to:

Precise – precision – precisely

Commit – commitment

Require – requirement

Manufacture – manufacturing – manufacturer

Satisfy – satisfactory – satisfaction

Measure – measurement – measuring

Solve – solution – solving

III. Read the text "VIP aircraft Interiors Manufacturing – modern production technologies" and say what InterAMI Interior experts do to conform to world aviation industry standards.

VIP aircraft Interiors Manufacturing – modern production technologies

Aircraft interiors design and manufacturing, as well as aviation industry as a whole, impose very strict and yet simple requirements on the quality of aviation materials and technological processes. The quality must be perfect. The technology must be precise.

As a designer and manufacturer of aircraft interiors, and VIP aircraft interiors in particular, InterAMI always strives to meet these requirements and uses the best certified materials and the most advanced products and technologies to satisfy and exceed the most demanding customers' expectations. All interior parts and elements are environment-friendly, durable, fire-safe and noise-absorbing, and all interior production technologies serve to ensure the utmost comfort and safety of the aircraft passengers during their air travels.

In process of aircraft interiors design InterAMI Interior experts use the most advanced software supplied by world industry leaders such as Dassault Systemes (France), Auto Desk (USA), Open Mind (Germany),

The use of ultra-precise measuring methods, milling machines Flex-O-Therm (Netherlands), edge trimming robots Kawasaki (Japan), thermoforming machines Flex-O-Therm (Netherlands) and HLM (UK) and the expertise of the production

team allow to implement the most creative design solutions quickly and precisely. The combination of the creativity, commitment to quality and advanced technologies result in beautiful VIP aircraft interiors that fully comply with world aviation industry standards.

InterAMI works in close cooperation with leading suppliers of certified aviation materials and VIP aircraft interior parts. Among our partners are Adams Rite Aerospace (USA), Fast Aircraft Seat Technologies (Switzerland),

IV. Insert the proper words from the text:

1) Aircraft interiors design and manufacturing … very strict and yet simple requirements on the … of aviation materials and technological processes.
2) InterAMI strives to meet the … and uses the best … materials and the most … products and technologies to satisfy customers' expectations.
3) All interior production technologies serve to ensure the utmost … of the aircraft passengers during their air travels.
4) The combination of the creativity, … to quality and advanced technologies result in beautiful VIP aircraft interiors that fully … with world aviation industry standards.

Quality, comply, impose, commitment, requirement, comfort and safety, certified, advanced

VI. Answer the following questions:

1) What does InterAMI do to satisfy customers' expectations?
2) What can you say about the quality of all interior parts and elements?
3) What measuring methods and advanced software are used in designing interior?
4) Who are InterAMI partners?

V. Match the beginning and the end of the sentences:

1)	As a designer and manufacturer of aircraft interiors InterAMI always strives…	1)	to meet the requirements and uses the best certified materials and the most advanced products and technologies.
2)	All interior production technologies serve…	2)	to ensure the utmost comfort and safety of the aircraft passengers during their air travel.
3)	In process of aircraft interiors design InterAMI Interior experts use…	3)	impose very strict and simple requirements on the quality of aviation materials and technological processes.
4)	The combination of the creativity, commitment to quality and advanced technologies result in…	4)	beautiful VIP aircraft interiors that fully comply with world aviation industry standards.
		5)	the most advanced software supplied by world industry leaders.