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**Natalia Drobysheva****TRENDS IN THE DEVELOPMENT OF THE AVIATION VOCABULARY**

National Aviation University, 1, Kosmonavta Komarova ave., 03058, Kyiv, Ukraine

E-mail: nat.d@list.ru

**Abstract**

*The article considers modern trends in the development of the terminology of the aviation industry, which were formed under the influence of linguistic and non-linguistic mechanisms. **The purpose** is to identify and analyze the general trend and features of the formation and prospects for the development of the terminology of the aviation industry. **The tasks** are to study the specific features of the origin, nature and state of the terminology of the given area of knowledge, to study the structural and word-building composition, the ways and characteristics of education, the role of international words and the harmonization of terms and terminology, and the definition of the educational (didactic) function of terms and terminology and teaching students terminology. **Methods:** Analyzing special vocabulary, the cognitive approach and the general linguistic principles of anthropocentrism, expansionism, neofunctionalism and explantoriness were used. **Conclusions:** Aviation vocabulary develops along the lines of general trends in scientific and technical terminology. The development of the terminology of the industry goes towards the complication of its structure and semantics, its ordering and systemic nature. The general trend of the economy of linguistic means for the modern period is manifested in the aviation terminology in an effort to compress the form of the term, and the form of the nomenclature terms is the most economical means for naming specific objects of the industry (particular notions). The main directions, prospects and tendencies of qualitative and quantitative growth of terms and their educational significance are shown.*

**Keywords:** term; terminology; aviation vocabulary; trends; nomenclature names**1. Introduction**

With the development of science and technology, an increase in the scope of scientific knowledge in the lexical system of language, special vocabulary predominates, including primarily terms, as well as professionalisms and professional jargons of special fields of knowledge.

The semantic core of special vocabulary is terms, professionalisms and professional jargon belong to the periphery.

Naming special notions of any professional field of knowledge, thereby fixing the results of a certain cognitive professional activity, terms are also a way of representing knowledge and a means of forming new knowledge, a "concentrate of thought" and serve as a reference for specialists in this professional field, are used as the most important element of professional communication.

The content of the term always includes knowledge of a rational character that goes beyond

the boundaries of common vocabulary, conditioned by a certain scientific and professional activity.

The totality of the terms of a particular area of knowledge or its fragment form the appropriate terminology.

Regulated terminology with fixed relationships reflecting connections between notions named with terms constitute terminologies, which is a logical-conceptual apparatus, corresponding to the scientific and professional field of knowledge and activity.

Under the influence of cognitivism, the emphasis of researchers is shifting towards the role of terms in scientific cognition and thinking, the importance of terminology in the organization and the manifestation of knowledge. The term begins to be understood as a means of scientific conceptualization of knowledge, as a verbalized result of learning a special area of knowledge or activity. The structure and organization of a terminology system is closely connected with the cognitive essence of terms and represents a

conceptual model - the conceptosphere - of a specific area of knowledge, i.e. a special professional-oriented picture of a fragment of the world, based on knowledge, skills and experience in a specific scientific professional field.

The concept of a professional picture of the world is directly connected with the processes of cognition of the profession world, which, in turn, are denoted by terms.

Work on terms, their acquisition contributes to the intellectual and linguistic development of the student, the formation of his personality within the professional image of the world, ensures a thorough mastering of the material in the disciplines studied, and the ability to correctly and easily use terms in professional discourse.

## 2. Basic principles of the terminology studies

An effective tool in this direction is the use of organized terminological systems in the educational literature. At the same time, students are brought up on modern systematized terminology and, accordingly, a system of notions, which facilitates their orientation in a system of special notions and the place of notions in the studied area of knowledge. The ultimate goal of such training is the preparation of the student for future professional activity.

The cognitive approach to the analysis of terms and terminology is the most authoritative course in their study. Cognitive orientation contributed to the formation of the main principles that determine the appearance of modern terminology, i.e. anthropocentrism, neofunctionalism, expansionism and explanatoriness [1].

Anthropocentrism in lexicology takes a leading position and is understood as a way out of the boundaries of the language in the field of knowledge about the surrounding reality, about the person (language personality), about the relationship of linguistic knowledge with knowledge of the world and their reflection in the semantics of the language.

Expansionism is a characteristic principle of modern science. According to V.A. Maslova, "language by its nature strives beyond its limits, strives to encompass all larger spaces of the spirit" [2]. As a result of the expansion, there is an expansion of the field of application of linguistic research in other spheres of human activity, integration with other sciences (engineering linguistics, computer linguistics, etc.).

A large number of terms fall into the general vocabulary, and the terminological problems have a significant impact on the language as a whole.

Neofunctionalism in terminology is associated with the study of modern functions of terms in situations of professional communication, in technical texts, in computer systems (for example, in automated information retrieval systems, etc.). In the hierarchy of the function of cognitive terms, heuristic - systematizing, modeling, prognostic, orienting, acting as an instrument of knowledge, including for learning should be highlighted.

Explanatoriness is a principle relevant to terminology. Today, the study of terminology seeks not only to describe, but to explain facts and phenomena [3]. However, today structural and semantic descriptive studies, descriptions of special vocabulary of areas of knowledge prevail.

Each terminology has its own peculiarities and norms. The specific features of individual terminologies, in particular the peculiarities of their semantics, are to a certain extent determined by the nature of the areas of knowledge and activity reflected by them.

## 3. Peculiarities of the origin and state of the aviation industry

Time and conditions for the emergence and subsequent development of relevant areas of knowledge and activity have significant influence on the features of terminologies and their development.

Practical development of aviation is associated with the beginning of the twentieth century. December 17, 1908 was the first successful flight of the aircraft with an internal combustion engine of American mechanics brothers U. and O. Wright. Then they start building planes in Europe. The further development of aircraft construction represents a wide range of scientific and technical innovations in various areas.

Since the mid-20-ies duralumin began to be used in aircraft construction. In 1924-1925. A.N. Tupolev built all-metal aircraft. In the 30-ies a transition is made from a biplane to a monoplane. Then, aircraft with liquid jet engines are introduced. Jet engines begin to be used in civil aviation aircraft. Supersonic aircraft appear. Helicopter construction develops rapidly [4, p. 10].

A number of scientific disciplines: aerodynamics, engine theory, air navigation are basic for the development of aviation and at the same time for the development of aviation terminology.

Any special sphere is formed by a hierarchy of more complex activities and, correspondingly, a complex structure of private scientific knowledge [5].

The further development of aviation science and technology leads to quantitative growth and qualitative changes, complicating the nature of the special lexicon of the aviation industry. A number of new disciplines appear, each of which needs its own terminology. In this case, each terminology tends to the fullness of the reflection of a given area of knowledge. Along with the progress, the content of notions changes, terms constantly grow with new knowledge, which makes terminological systems open and dynamic.

#### 4. Types and normalization of aviation vocabulary

The terms used in the aviation industry are heterogeneous in their structure, semantics, and functions in the text.

Predominantly the special vocabulary of the industry is represented by general scientific, technical, intersectoral, branch, narrowly specialized terms, nomenclatural names, and also in oral informal speech by part - professionalisms and professional jargon.

Changes in the structure, semantics, and composition of terminology occur under the influence of both linguistic and extralinguistic factors and are manifested in the form of terminological phenomena, trends and patterns.

In the process of normalization (putting in order, standardization) of terminology, deliberate regulation of terminology is carried out with simultaneous determination and fixation of the current level of scientific and technical knowledge in terms.

The basic requirements for the standardized term: the correspondence of the meaning of the term to the notion it expresses, the unique correspondence between the term and the notion (the absence of polysemy and synonymy), systemicity, brevity, derivational ability, linguistic correctness [6, p.23].

The general properties of terms and terminology, the requirements for them, reveal certain trends and patterns that are realized to a greater or lesser degree.

It is of fundamental importance to recognize that terms being linguistic signs are in the sphere of the laws of the language and in real functioning some terms may have ambiguity, variation, pragmatism,

some inaccuracy, uneasiness, long length and other signs of the common word. Accounting for these linguistic realities contributes to the development of more stable terminology. At the same time, "requirements for the term" are considered as requirements for an ideal term.

However, in a number of situations, an unambiguous understanding of terms is mandatory (in the work of air traffic controllers, pilots, quality control, important technological process, etc.), which contributes to increasing the degree of regulation of terminology normalization and systemacity.

#### 5. Ways of terms and nomenclature formation

In the aviation industry terminology, the nomination methods, usual for the literary language, are active, but the degree of their activity is different, the number of models is more limited and there is a distinctness in the choice of word-forming elements. There is a distinct trend to expand the means of replenishment of terminology, including their combination.

Traditional productive ways of term formation: semantic, morphological, syntactic, morphological-syntactic at different stages of development of the aviation industry participate to a varying degree in replenishing the terminology of the industry.

With the semantic method, the replenishment of terminology is carried out on the basis of changing the meaning of words available in the language due to their rethinking or shifts in their semantics (*wing, flap, blade, empennage*).

Many of these terms are part of the core of the industry terminology and are actively involved in the formation of new terms by derivation, formation of word combinations, etc. (*flying wing, swing wing, wing tip, fixed wing*).

In the morphological term formation, the methods of suffixation and prefixation is used (*spoiler, piloting, concourse, co-pilot*).

The method of affixing word-formation is also relevant when updating the modern vocabulary of aviation vocabulary, mainly by using affixes in phrases and complex terms (compression): (*outboard slat, vertical speed indicator, turn coordinator, feederliner*).

The syntactic method of term formation as the most informative and transparent is dominant in aeronautical vocabulary and is realized with the help of various structural models of terminological word combinations (*fuel depot, control tower, side stick,*

*center stick*). This method allows you to quickly and easily with sufficient accuracy to form the nomination of objects and reflects the general trend in terminological systems, i.e. the movement towards analytism. In many European languages for specific purposes verbose terms amount to 60-80% of the total number of terms [6, p. 121]. The role of the word combinations is enhanced by the possibility of using typical terminological combinations for machine identification of terms and removal of polysemy and homonymy in automated text processing systems.

However, word-combinations due to their length are inconvenient when frequently used, they do not satisfy the requirement of shortness of the term and, to a certain extent, the general tendency of saving efforts, in particular language means, i.e. desire for a concise and capacious nomination of a special notion.

Therefore, a large number of cumbersome terms tend to shrink the form, and the morphological-syntactic term formation, which is a number of ways (ellipsis, composing, abbreviation) of the formation of one-word terms from word combinations by syntactic and morphological transformation of lexical forms, is notable for high intensity among other ways of term-forming processes: *unmanned aerial vehicle - UAV, air traffic controller - ATC, turboprop - turbine engine and propeller*.

Such characteristics of the term as term-forming ability are important in teaching students, since they allow to acquaint learners simultaneously with a whole word-formation nest or a series of terms.

A distinctive tendency to economize linguistic means is manifested in the formation of technical, production nomenclature names (nomenclature) intended for naming particular notions, as a rule, for series of homogeneous objects (types, series, models, sizes, executions) related to one more general notion and having close or similar features.

Nomenclature names are a vast constantly increasing layer of special vocabulary, including aviation, which has a special linguistic form and special purpose to give the most convenient, economical, concise and systematic designation for a specific industry product.

Concreteness, unambiguity, materiality, fixity for the realities of professional activity, independence from the context, high frequency of use among industry experts are qualities inherent in the nomenclature.

Nomenclature names consist of two parts [7]. The syntactically main component is the common (generic) term for the selected nomenclature series of particular special concepts (objects), to the name of which the syntactically subordinate and rather conditional component (nomenclature index, nomenclature marker) is added serving to narrow the general special notion, denoted by the term, to a special particular notion (*AXP340 transponder, SV-XPNDR-262 Mode S transponder*). In the English language the generic term can be the first and the last in the complex nomenclature term.

Nowadays, a significant part of the nomenclature not only refers to particular notions (objects), but also gives information about them in the form of a set of distinctive features of the object called by the term, which can be: form, material, purpose, operation principle, parameter, manufacturing technology, modernization, etc.

For some of the nomenclatural names in the nomenclatural index, information on the specific differences of the object may be absent or almost absent.

We can fully accept the statement of S.V. Grinev-Grinevich that the nomenclature represents the next stage in the development of technical special vocabulary, adapted to meet the needs for a large number of specific product names. In the form of nomenclature, there is an aspiration to place as large a volume as possible with a minimal form [6, p. 42, 43].

## **6. Internationalization and harmonization of terms**

Borrowing of foreign-language terms makes a significant contribution to the replenishment of aviation vocabulary.

The share of borrowed terms characterizes the degree of influence on the development of terminology of other national languages and the orientation of contacts.

The authority of the source language leads to the borrowing into many languages from one language and the appearance of international words. By international words we mean identical or similar in form and similar in content terms used in several (at least three) national languages.

At present, there is a tendency towards the internationalization of a large number of specific languages in the growth of the prestige of internationality.

Increasing internationalization of terms facilitates international communication of specialists, helps the unification of efforts of scientists and specialists from different countries in solving important scientific and technical problems.

Many scientists believe that the internationalization of terms is an effective tool for language development.

The use of international terms allows filling lacunas in the national terminology with more abstract vocabulary lexical units. Language for specific purposes is increasingly internationalized.

Traditionally, one of the most active and promising ways of forming international terms is the use of Greek-Latin roots. The trend remains one of the main things in our days.

Used by many languages for the formation of terms, the morphemes approaching the prefixes, called international terminological elements such as *air-*, *gyro-*, *auto-*, etc., are very productive and convenient because they are known to specialists speaking different languages.

The advantage of such terms is the ease of education: *aerodrome*, *aeronautics*, *airport*, *aerostatics*, *hydroplane*, *autopilot*.

The current growth in international cooperation in the field of science and technology requires strengthening work on the harmonization of the meanings of similar in form multilingual terms, the mutual adjustment of their content and forms, the establishment of clear correspondence between them and puts the issues of harmonization of terminology on the agenda.

A special need to ensure the comparability of scientific and technical terminologies for an unambiguous understanding of terms at the national and international levels is noted in a number of situations (in international relations, quality control, important technological processes, international flights, etc.).

The results of interlanguage harmonization of terms and concepts are fixed in normative dictionaries, international standards, and also terminological databases being developed by multilingual banks. At present, the problem of establishing strict correspondence between the terms of different languages is still far from being solved.

Information technologies become the main elements of science and technology.

In aviation, there is a steady expansion of areas of knowledge and, accordingly, their growth and differentiation, with the allocation of separate areas

of scientific and technical knowledge and disciplines.

## 7. New Information Technologies in Aviation

New information technologies (intelligent information retrieval systems, calculation and logical systems, expert systems) have dramatically increased the degree of automation of scientific research, professional activity and professional communication) due to difficult or previously not formalised areas of knowledge (information technology and systems in aviation, information security in aviation, intelligent robotic systems, complex systems management, air traffic control, etc.).

A huge step forward was the use in the educational process of new information technologies, providing quick access to large volumes of information, new scientific achievements. The use of computer training in foreign languages simultaneously contributes to the development of creative thinking and activity of students.

Due to the fact that a significant part of the information in scientific and technical texts is transmitted in terms, many of the information processes have a predominantly terminological nature, for example, indexing, the development of means of linguistic support of information systems.

The organization and presentation of knowledge (knowledge bases) is a central issue of new information technologies. The leading trend is turning towards linguistic methods.

The emergence of knowledge bases is associated with the development of logical-linguistic models (semantic networks, frames, production systems) that have allowed to reflect, in varying degrees, such characteristic features of knowledge as internal interpretability, structuredness, connectivity, activity.

In the form of a semantic network, it is possible to represent knowledge contained in texts in natural language. Expert systems are of paramount importance in the development of science, design, production management, etc.

Knowledge bases reflect knowledge of the objects of the domain, its structure, cause-effect relationships with respect to facts, events, processes, phenomena. In knowledge-based learning systems, an important role is assigned to knowledge bases.

Modeling of creative processes (translation, situational management, etc.) is associated with the

solution of formalization problems of morphology, syntax, semantics and pragmatics of sentences [8-10].

The important role of terms and terminologies in modern intellectual systems is primarily due to the fact that, as cognitive-communicative special language units, they are maximally adapted to receive, store, process and transmit information and are a means of scientific cognition.

Further progress of new information technologies, including in aviation, is also connected with the development of terminological information resources and knowledge engineering. Therefore, each specialist should be aware of the properties of terms and terminologies and ways of studying them.

## 8. Conclusions

The development of aviation terminology (its structure, semantics, composition, etc.) occurs in close connection with and dependence on extralinguistic factors (the nature and state of the aviation industry) and linguistic factors (patterns of language development, savings of linguistic means, etc.) and in line with general current trends of scientific and technical terminology. The development of the terminology of the aviation industry goes towards a larger number of special vocabulary, the complexity of its composition, semantics, as well as order and system.

Terminological training contributes to the steady and conscious acquisition of the material on the future specialty by students and the ability to correctly and easily use the terms in speech.

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**Н.Л. Дробишева**

**Тенденції розвитку авіаційної лексики**

Національний авіаційний університет, просп. Космонавта Комарова, 1, Київ, Україна, 03058

E-mail: nat.d@list.ru

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У статті розглядаються сучасні тенденції розвитку термінології авіаційної галузі, що склалися під впливом мовних і немовних механізмів. **Мета:** Виявлення та аналіз загальних тенденцій і особливостей формування та перспектив розвитку термінології авіаційної галузі. **Завдання:** Дослідження особливостей зародження, характеру і стану термінології даної галузі знання і діяльності, вивчення структурного і словотвірного складу, способів і особливостей освіти, ролі інтернаціоналізмів і гармонізації термінів і термінології, визначення навчальної (дидактичної) функції термінів і термінології і термінологічного навчання студентів. **Методи дослідження:** При аналізі спеціальної лексики використовувалися когнітивний підхід і загальнолінгвістичні принципи антропоцентризму, експансіонізму, неофункціоналізму і експантарності. **Висновки:** Авіаційна

лексика розвивається в русі загальних тенденцій науково-технічних термінологій. Розвиток термінології галузі йде в бік ускладнення її складу і семантики, її впорядкування та системності. Загальна для сучасного періоду тенденція економії мовних засобів проявляється в термінології авіації в прагненні до стиснення форми терміна, а форма номена є найбільш економним засобом для номінації конкретних об'єктів галузі (окремих понять). Показані основні напрямки, перспективи та тенденції якісного і кількісного зростання термінів і їх навчальна значимість.

**Ключові слова:** термін; термінологія; навчання; професійна картина світу; номенклатурні найменування

**Н.Л. Дробышева**

**Тенденции развития авиационной лексики**

Национальный авиационный университет, просп. Космонавта Комарова, 1, Київ, Україна, 03058

E-mail: nat.d@list.ru

В статье рассматриваются современные тенденции развития терминологии авиационной отрасли, сложившиеся под влиянием языковых и неязыковых механизмов. **Цель:** Выявление и анализ общих тенденций и особенностей формирования и перспектив развития терминологии авиационной отрасли. **Задачи:** Исследование особенностей зарождения, характера и состояния терминологии данной области знания и деятельности, изучение структурного и словообразовательного состава, способов и особенностей образования, роли интернационализмов и гармонизации терминов и терминологии, определение учебной (дидактической) функции терминов и терминологии и терминологического обучения студентов. **Методы исследования:** При анализе специальной лексики использовались когнитивный подход и общелингвистические принципы антропоцентризма, экспансионизма, неофункционализма и эксплантарности. **Выводы:** Авиационная лексика развивается в русле общих тенденций научно-технических терминологий. Развитие терминологии отрасли идет в сторону усложнения ее состава и семантики, ее упорядочения и системности. Общая для современного периода тенденция экономии языковых средств проявляется в терминологии авиации в стремлении к сжатию формы термина, а форма номена является наиболее экономным средством для номинации конкретных объектов отрасли (частных понятий). Показаны основные направления, перспективы и тенденции качественного и количественного роста терминов и их учебная значимость.

**Ключевые слова:** термин; терминология; обучение; профессиональная картина мира; номенклатурные наименования

**Natalia Drobysheva.** PhD in Philology. Associate Professor.

National Aviation University, Kyiv, Ukraine.

Education: Kyiv Slavonic University, Kyiv, Ukraine.

Research area: social linguistics, cognitive linguistics.

Publications: 15.

E-mail: nat.d@list.ru