

# ROLE AND POSITION OF MULTICOMPONENT TERMS IN AVIATION COMMUNICATION

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**Abstract.** This paper provides a description of multicomponent terms as means of reflecting features of objects in the most complete and accurate way. Grammatical, semantic and structural aspects, as well as methods of translating multicomponent terms, are considered.

**Key words:** multicomponent term, determinative component, inner term, term-element.

## 1. Introduction

More and more terms are needed due to the constant development of aviation, and along with simple terms used for exact reproduction of up-to-date notions, compound terms, terminological word-combinations, and multicomponent terms are used too. With the help of multicomponent terms, it is possible to reflect necessary and sufficient features completely and precisely.

This topic is very relevant since the question of exact comprehension of terms and finding their equivalents in Ukrainian and specifically the question of multicomponent terms are encountered by specialists very often and especially at a given stage of aviation development.

A terminological system for civil aviation in Ukrainian is being formed now. All previous groundwork and the experience with the Russian terminological system are being used for that purpose. The International Civil Aviation Organization (ICAO) plays a large role in elaborating the meaning of standard terms. Interpretation

of standard terms can be found in ICAO documents so that they are understood identically in all countries.

## 2. General characteristics of a term

A term is a unit of some particular natural or artificial language (word, word-combination, abbreviation, symbol, combination of a word and letter-symbols, combination of a word and digit-symbols) that possesses a special terminological meaning resulting from spontaneous usage or specific, conscious joint agreement and can be expressed in verbal form or by a formalized shape that exactly and completely reflects basic indications (features) of a corresponding notion that are essential at a given level of development of science and technology. A term is a word that is obligatorily correlated with a definite unit corresponding to a logical-notional system in terms of meaning.

A. A. Reformatskyi defines terms “as mono-semantic words lacking (deprived of) expressivity”

(Реформатский 1959). M. M. Glushko states that “a term is a word or word-combination that is used to express notions and designation of objects and possesses precise semantic margins due to the presence of its strict and accurate definition (Глушко 1974). It is therefore monosemantic in terms of a corresponding classification system”.

A term is an inherent part of a lexical system of a literary language. Terms are also distinguished from other word categories by their enormous informational connotation. The most accurate, concentrated and economical definition of a scientific or technical notion is rendered with a help of a scientific or technical term (Циткина 1988).

The main claim that is laid on the term is monosemanticity (single meaning). In terms of general terminology, this demand is realized in two ways since there exist two categories of terms: general scientific and general technical terms and special (nomenclatorial) terms. General scientific and general technical terms express common (general) notions of science and technology. Terms exist not just in the language, but also in the structure of a definite terminology. Terminology, as a system of scientific terms, is a subsystem within the general lexical system of a language. According to A. A. Reformatskyi, terminology is a system of notions of a given science, fixated (attached, fixed) in a corresponding verbal expression (Реформатский 1959). The word can be polysemantic in general language (beyond a given terminology), but entering a definite terminology, it acquires monosemanticity.

A term does not require any context, like a common word, since 1) general scientific and technical terms it is a constituent of a definite terminology, which already is a context; and 2) special terms it can be used in isolation, for example, in texts of registers or orders in technology. That is why it must be monosemantic not on the whole in the language, but within the limits of a given terminology.

Within the limits of the lexical system of a language, terms display the same qualities as other words; that is, they are characterized by antonymy and idiomaticity. For example, the term *valve* in engineering designates *кран*, in radio engineering *електронна лампа*, and in hydraulics *затвор*. The term *power* in physics signifies *потужність* or *енергія*, in mathematics *степені*, and in optics *сила збільшення лінзи*.

One term can be a constituent of different terminologies of a given language, which corresponds to interscience terminological homonymy, for example:

- reaction: 1) in chemistry, 2) in philology, 3) in politics;
- reduction: 1) in philosophy, 2) in law, 3) in phonetics, 4) in technology, 5) in mathematics;
- assimilation: 1) in ethnography, 2) in phonetics, 3) in politics, 4) in biology.

### 3. Multicomponent terms

Multicomponent terms penetrate English scientific and technical literature more and more since a meaning of

a compound word is always more accurately specialized than the meaning of a corresponding word-combination. Multicomponent terms give an opportunity to reflect necessary and sufficient indications with better completeness and accuracy; for example, a compound word such as *all-weather fighter* (*всезгодній винищувач*, that is, the type of fighter intended for day flights as well as for flights in any weather) and a word combination such as *fighter for all weather* (fighter suitable for use in any weather) (Нагальні... 1999).

#### 3.1. Grammatical aspect

There are two types of multicomponent terms in the English language. This will be clear if we compare two terms like *rocket braking* and *braking with rocket*. Both of these terms have the same meaning: braking of the aircraft by means of rocket engines. However, their grammatical structures differ. In the first term, there are no grammatical means (endings, prepositions) that would express semantic relationships (connections) among the components of the term. The second term is formed in a different way; the preposition “with” is used here, which clearly indicates that the rocket engine appears to be the means by which the braking is accomplished. At the same time, the first term allows other interpretations, for example, *гальмування ракети*. Terms of the first type which do not have grammatical relationships among the component parts which form the term are referred to as compound words. Terms of the second type, of which every component is formed grammatically (either through the presence of endings, or by means of prepositions), are referred to as set terminological expressions.

The main component of the term always stands in the end. A determinative component, in its turn, may enclose a term or terms that express notions used as characteristic indications of the called object. In these inner terms, the main and the determinative components can be singled out, and here the determinative component stands before the main one.

If viewed grammatically, multicomponent terms can comprise every part of speech. A noun appears to be the universal means of transference of all categories of terminological notions. This viewpoint is based on the theoretical premise of a high degree of noun abstraction, and, as the result of this, nouns are the only lexical-grammatical means that express scientific and technical notions about objects, qualities, and actions. According to the other point of view, words of different parts of speech can act as term components in context. Here it is very important to mention the varied degree of nominativity of the four main parts of speech. According to the viewpoint of some linguists, the extent of the possibility of the noun to be the denomination is the biggest one because firstly it is characterized by the categorical meaning of the objectivity (the category of noun makes it possible to think in the form of denomination). Secondly, it is characterized by distribution of its own grammatical categories such as gender and number. Categories inherent to the noun have an onomasiologic character,

animateness and inanimateness, and this case is a syntactic category.

Adjectives entering terminological combinations can be regarded not only as term-elements (dependent terms), but also as the main part of the whole (independent terms).

### 3.2. Semantics of multicomponent terms

From the point of view of semantics and notional correlations, three main types of terms-compound words can be distinguished among the elements of the term.

In the first type of terms, the determinative component is itself a term inside of which another determinative component can be singled out that is also a term (*inner* term of the second order) and so on. In other words, the structure of every term singled out of the determinative component repeats the structure of the whole term.

The determinative component of the second type of terms is not always a term. In terms of this type, the main component is determined by the term-element that directly precedes it, and then a new two-component term is determined by the term-element that stands next to the main component, which again produces a new three-component (ternary) term.

The third type of terms (which are most widespread) takes up an intermediate position between the first and second types of terms. Terms can enter the structure of the determinative component of these terms, but the determinative component as a whole by then is not a term as in the first type, and if it is, then it is a term of the second or third type. In turn, although the main component can be determined by an immediately preceding term-element, there is no strict successive distribution of the main component as in the second type.

The third type of terms can be divided in two main groups. The first group consists of compound terms of the main component, which is not strongly attached to some sort of determinative components, which are the terms of the second or third type. The second group consists of terms that have the main component attached semantically to an immediately preceding determinative component (or components), and the rest of the determinative components are themselves a term (no matter which type).

In some cases it can be difficult to ascribe a term to one type or another because its syntactical structure allows a dual interpretation [Нагальні ... 1999].

According to structural-notional analysis, English multicomponent terms can be divided into two big groups. One group consists of determinative components that reproduce qualitative indications characteristic of a given object or phenomenon. The other group consists of determinative components that reflect relations of belonging in the broad sense of the word that connect a given object or phenomenon with others.

### 3.3. Structure of multicomponent terms

3.3.1. The following models of multicomponent terms can be singled out:

- 1) term-model N + N:  
*separation point* – *точка відриву*  
*flow velocity* – *швидкість течії*;
- 2) multicomponent attributive word-combinations:  
*aerospace ground equipment* – *наземне устаткування для авіаційно-космічних комплексів*;
- 3) term-model (N + Part. I) + N:  
*plane-boarding gates* – *виходи на посадку в літак*;
- 4) term-model (N + Part. II) + N:  
*space-based platform* – *космічна платформа*;
- 5) term-model (Adj. + Part. I) + N:  
*low - loading landing gear* – *шасі з малим навантаженням*;
- 6) term-model (Adj. + Part. II) + N:  
*nuclear-armed missile* – *ракета з ядерним зарядом*;
- 7) term-model (Num. + Part. II) + N:  
*two-wheeled vehicle* – *двоколісний транспортний засіб*;
- 8) complex terms with anthroponymies:  
*Zhukovsky's theorem on the persistence of circulation* – *теорема Жуковського про збереження циркуляції*;
- 9) complex terms with the term-components - looking, -shaped, -type:  
*crescent-shaped circular arc aerofoil section* – *серпоподібний профіль крила* (Інтернаціональні... 1980).

3.3.2. Multicomponent terms can be classified as cognates (international words) according to their inner and outer form:

1. Complete cognates which are characterized by complete coincidence of morphemes in outer and inner forms (sounding and writing) (for example: atom, ion, isotopes).

2. Half-latent (half-concealed) cognates where one stem coincides in outer and inner form, and the other one coincides just in inner form (for example: active deposit, alpha radiation, fission neutrons).

3. Terms which are on the way to becoming international and in which there is a complete coincidence of one stem in outer and inner form and complete noncoincidence of the other stem in these forms (for example: alpha influence, isotope's division).

4. Implicit international words which are characterized by coincidence of stems just in inner form in comparing languages (for example: compound nucleus, fast fission, thermal fission).

5. Implicit terms which can be considered to be on the way to becoming international and in which one stem coincides in inner form and other coincides neither in inner nor in outer form (for example: decay product, error burst, parity check).

Terms-international words can be divided into three groups according to their inner form:

- a) international terms of which inner form coincides in comparing languages (for example: *категорія граматична* – grammar category);
- b) international terms of which the inner form coincides partially (for example: *двоїсті форми* – variant forms);
- c) international terms with different inner forms in different languages (for example: *критерій прийому* – performance (Дроздова 1989).

#### 4. Translation of multicomponent terms

E. F. Skorokhodko formulates a range of formal translation rules of two-component terms-compound words such as “if one succeeds in finding out the meaning of components, then these rules can help to uncover the meaning of the compound word in whole”(Скороходько 1963).

First, one should determine which lexical-semantic category components of a compound word belong to, that is what exactly they designate: objects, actions, or qualities. A term-compound word, both components of which designate objects (machines, mechanisms, equipment), can be translated in different ways depending on the relations given objects are in.

If the second object is a part of the first one, then the Ukrainian equivalent looks like:

*singular noun in nominative case + singular noun in genitive case.*

For example:

*fuel consumption (витрати палива),  
control system (система контролю).*

If the first object is a part of the second one, then the first component is translated by means of an adjective since it determines the qualitative peculiarity of the second object, which differentiates it from other similar objects.

For example:

*laboratory research (лабораторне дослідження),  
gas turbine (газова турбіна).*

If the first component of a compound word designates an object, and the second one designates its quality, that is, essential characteristic of the object, such as weight, area, thickness, velocity, pressure, then the Ukrainian equivalent of the second component is in the nominative case, and the equivalent of the first component is a noun in the genitive case.

For example:

*engine weight (вага двигуна),  
plate thickness (товщина пластини).*

In order to know the number a noun that designates the object should be put in, one should find a corresponding English term in the capacity of an independent word in the microcontext and determine its grammatical number. By means of the compound word itself, the grammatical number cannot be identified since compound word components are very often written separately. However, they are not independent words; they are just stems. That is why an object number

designated by the first component is not expressed in a compound word.

Analyzing a compound word of the object + quality type, one should note if the notion expressed by the second component (quality) pertains to the object expressed by the first component. If the first component of a term designates an object, and the second one designates an action going on with this object, then the Ukrainian equivalent of the second component will be in the nominative case, and the equivalent of the first component will be in the genitive case.

For example:

*air pressure (тиск повітря)*

*tyre pressure (тиск в шині)*

1) **control-surface cable adjustment access:**

*access* – люк,

*adjustment access* – люк для регулювання,

*control-surface cable* – трос руля (керма) керування.

The meaning of the whole term is **люк для регулювання тросів руля (керма) керування;**

2) **cockpit canopy manual operating handle:**

*handle* – рукоятка

*operating handle* – рукоятка керування

*manual operating handle* – рукоятка ручного керування,

*cockpit canopy* – ліхтар кабіни (пілота).

The whole meaning of the term is **рукоятка ручного керування ліхтарем кабіни пілота;**

3) **radio wave speed measurement:**

*measurement* – вимірювання,

*speed measurement* – вимірювання швидкості розповсюдження (поширення),

*radio wave* – радіохвиля.

The meaning of the whole term is **вимірювання швидкості розповсюдження (поширення) радіохвилі.**

While translating sentences that contain a term-compound word, problems such as following are solved: questions of determining a translation unit, of a word combination's reference to the terms, and perception of a word combination as an integral indivisible unit or qualification of it as a free type. The definition of the character of the term-word-combination, depending on its components belonging to one or another lexical or stylistic layer, is quite important. In English, a term can be expressed by:

a) a word combination of which every component can function with the terminological meaning within the scope of a given word-combination, as well as outside of it;

b) a word combination of which one of the components is not a term beyond this given word combination;

c) a word combination of which both components are generally used words (Климзо 2003).

Formal and structural characteristics of multicomponent terms do not always coincide in English and Ukrainian, and this fact needs to be taken into account in the process of translation. The question of structural peculiarities of English multicomponent terms has

repeatedly been the subject of the research of linguists. According to the results, the main structural types of English multicomponent terms are as follows: noun + noun, adjective + noun, and participle I + noun. At the same time, such models as noun + preposition + noun and participle II + noun are not so widespread. When translating terms formed according to these models, one can use the method of so-called loan-translation can be used. As a rule, this method of translation is accompanied by some grammatical transformations. In some cases, only a descriptive way of translation can be applied (Глушко 1974).

In English, very often one of the components of the aviation term is expressed by a compound word. In the process of translation, a complete change in structure of the English multicomponent term can be observed. In a number of cases, an English term can be expressed by a multicomponent expanded word-combination. In the process of translation, attention should be paid to the fact that a sequence of components will be changed in a certain succession.

An integral part of terminological system in English, as well as in the Ukrainian, belongs to groups of multicomponent terms with general or repetitive components. The performance analysis indicates that very often adjective, participle I, and noun act in the capacity of repetitive components.

## 5. Conclusions

1. The topic discussed in this article is very relevant as constant development of aviation makes it necessary to invent more and more new terms. Terms are means though which accurate, concentrated and economical definitions of scientific and technical notions are rendered. Terms are usually monosemantic in the structure of a definite terminology, but they may be polysemantic in general language. Terms do not require any context and can be used in isolation.
2. A tendency is to use multicomponent terms more often because it is possible to reflect necessary and sufficient indications and features of some given objects and phenomena more completely and accurately by means of these terms.
3. Analyses showed that there are two types of multicomponent terms in English: terms which comprise prepositions for expressing their semantic relations and

terms with no grammatical means used for that purpose. Multicomponent terms can comprise every part of speech, but nouns are numerically prevalent in all other parts of speech in the capacity of term-components. According to semantics, there are three types of terms-compound words, which differ in the characteristic features of the main and determinative components. They can also be classified according to structural-notional analysis and according to their inner and outer forms as cognates.

4. There are certain rules that can help translate multicomponent terms. In the process of translation, one should note that the formal and structural characteristics of multicomponent terms do not always coincide in English and Ukrainian and pay attention to these peculiarities in order to avoid making mistakes in understanding terms.

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## DAUGIAKOMPONENČIŲ TERMINŲ VAIDMUO IR POZICIJA AVIACINĖJE KOMUNIKACIJOJE

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S a n t r a u k a

Straipsnyje aprašomi daugiakomponenčiai terminai, kurie pilniau ir tiksliau atspindi objektų savybes. Aptariami gramatiniai, semantiniai ir struktūriniai aspektai bei daugiakomponenčių terminų vertimo metodai.

**Reikšminiai žodžiai:** daugiakomponentis terminas, apibrėžiantis komponentas, vidinis terminas, terminas-elementas.