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PECULIARITIES OF TRANSLATION OF CENTRIFUGAL PUMPS TERMINOLOGY

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Abstract

The article views distinctive features of technical terms and peculiarities of their translation from English into Russian. It aims at revealing translation peculiarities of terminology in the oil-and-gas machine building industry. The study integrates different research methods: general scientific methods of description, analysis, synthesis and linguistic methods of component analysis, comparative analysis and quantitative analysis. Special attention is given to the difficulties for a translator while translating specifically multiple meanings of technical terms and stylistically colored lexical means. If a term does not have a stable equivalent in the Russian language, the translator should be able to appeal to some acceptable translation transformations. The oil and gas industry technical terms under the analysis are taken from the handbook of Chelyabinsk enterprise JSC"KONAR" – Termomeccanica Centrifugal Pump Handbook. In the process of analyzing terminological units of the glossary it is found out that most terms have stable equivalents in the target language (the Russian language). Among other ways of translation of the terminological units the descriptive translation, calquing and functional replacement may be observed. The relevance of the research is based on the necessity of deep analysis of the translation peculiarities of technical texts that are in demand in the Ural region, in particular in the oil-and-gas machine building industry. The research in the field of technical translation is an important task aimed at getting the appropriate translation that is essentially a linguistic support for the scientific and technical revolution, thus contributing to the acceleration of scientific and technological progress.

Keywords: Centrifugal pump, target language, calquing, generalization, descriptive translation, technical term.

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1. Introduction

Technical texts language is a part of an international language which uses its vocabulary and the laws of grammatical structure. It also has its own style that serves the purposes of the content of scientific literature. A technical text presents information in an accurate and clear way with very few or even no expressive or emotional verbal elements. Nowadays there is a need to distinguish technical translation as a particular type of translation activity and a special theory. The main task is to bring clear and accurate information to the reader when translating technical literature (Slinkina & Krasnova, 2017).

The impressive growth of the number of technical publications contributes to the need to perform a large number of translations of technical texts, which poses new challenges for researchers who are engaged in theoretical and methodological developments in the field of technical translations (Babayan, 2018).

Today, technical translation is considered to be a separate type of translation activity and has the status of an independent applied discipline. There are characteristic features of technical texts that can be seen in its grammar, vocabulary, and even style. The accuracy of information and unity, integrity of terminology, and correct translation of the meaning of the text are the most important (Sotnikova & Sakaeva, 2015).

Translation of technical texts requires deep knowledge of specialized terminology. Even native language might create obstacles in understanding a technical text if a translator has no awareness of the terminological component of the text, has no competence in using certain tools to interpret this or that meaning expressed by a term.

1.1. Specifics of technical terminology

A term has a specific nature. Term formation is a creative mental activity, the very process of it and the result of it in a verbal form.

A translator should perceive a technical phenomenon in a clear way, contrast possible peculiarities of the technical field in the corresponding linguocultures, choose a proper verbal form transferring a proper concept of the field.

However, emphasizing the terminological vocabulary and its restriction from other lexical units is associated with certain difficulties, for example:

a) some set phrases as well as many terms are widely used in scientific and technical literature. All these phrases cannot be translated word by word without violating the semantics of the whole combination;

b) a word or even several words may be omitted in the term of the source language. These words often need to be entered in the target language to adequately convey the meaning of the term: fluidized reactor – реактор на жидком топливе, easy axis – ось легкого намагничивания, half-life – период полураспада;

c) a term may be a truncated word: scope instead of oscilloscope, or a compound word formed from two truncated words: hydroman instead of hydraulic manipulator – гидравлический манипулятор, redox system instead of reduction-oxidation system – окислительно-восстановительная система. The meaning of such terms is found out from the context.

Although terminology considers the same lexical units as linguistics do in the vast majority of cases, these units have other features. They are subject to different regulatory requirements than lexical

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units in terms of linguistics. That is why we can say that terms are special words (Gushchina & Sidelnikova, 2017).

2. Problem Statement

During the research the following problem issues were raised and solved when translating technical texts:

- Difficulties in translating technical texts
- The problem of term polysemy

2.1. Difficulties in translating technical texts

With the development of science and technology new meanings of terms start to appear. Therefore, the translator has to create equivalent terms in order to express concepts in the native language. Thus, the main difficulty faced by a translator of technical literature texts is precisely the translation of neologisms (Belokon, Miroshnichenko, & Golova, 2018).

When translating terms in scientific and technical texts on oil and gas topics, the following difficulties may also arise:

- term polysemy,
- term complexity,
- lack of knowledge of terminology in the Russian language,
- realities.

Another major difficulty in translation is to convey in the translation text the results of the abstraction process that underlies any scientific text (Fedchenko, 2018, p. 80).

The analysis of English-Russian translations of the technical texts shows that stylistically colored lexical tools present significant difficulties for the translator. As a rule, these tools are not reflected in special dictionaries, and general translation dictionaries do not provide equivalents that are acceptable for use in technical translation.

2.2. The problem of term polysemy

The question of how the polysemy of a term is fixed in dictionaries, can be answered as follows: if the meanings of the same term given in the dictionary refer to different areas of knowledge, abbreviated names of these areas are put down, for example: aerod. = aerodynamics, hydra. = hydrodynamics, text. = textile industry, chemical. = chemical industry, etc. (Mashinets, 2018, p. 145).

3. Research Questions

Research question of this paper is that technical texts terminology have specific peculiarities in translation.

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3.1. Peculiarities of translation of technical terms

Terminology is the most important factor in the initial evaluation of scientific and technical translation (Yakovleva, 2016).

Before starting to translate a text which refers to the oil and gas sphere, the translator must acquire the necessary knowledge for finding an equivalent in the translation language more accurately and be able to choose the appropriate verbal element for a particular context (Alekseeva, 2018).

There are several ways to translate terms.

1."Calquing is reproducing the combinatorial composition of a word or phrase when the constituent parts of a word (morpheme) or phrase (lexeme) are translated by the corresponding elements of the target language" (Kazakova, 2002, p. 88).

2."Transcription is a formal, phonemic recreation of the original lexical unit using the phonemes of the translating language, a phonetic imitation of the original word" (Kazakova, 2002, p. 63).

3."Transliteration is a formal letter-by-letter reconstruction of the original lexical unit using the alphabet of the target language, a letter imitation of the original word" (Kazakova, 2002, p. 63)

4."Combined (mixed) translation – a combination of two or more than one translation technique at a time" (Kazakova, 2002, p. 66).

When translating technical terminology, it is important to find a suitable equivalent. "A good equivalent of the term meets three requirements: it preserves the brevity of the original, conveys the scope of the original concept, and does not repeat the term already existing in the Russian language. However, finding an exact equivalent of the term by a translator is impossible without a good knowledge of the subject and requires a fairly thorough analysis of the context" (Klimzo, 2006, p. 57).

4. Purpose of the Study

The purpose of the study is to analyse the peculiarities of translation of terminology in the oil and gas engineering industry from English to Russian.

The research has the following tasks:

1) to determine the specifics of technical terminology;
2) todescribe the main characteristics of technical translation;
3) toconsider the features of translation of technical terms in the oil and gas engineering industry.

5. Research Methods

The aim of the research presupposes application of such methods as general scientific methods of description, analysis, synthesis and linguistic methods of component analysis, comparative analysis and quantitative analysis.

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6. Findings

6.1. The problem of term polysemy

In order to illustrate the problem of multiple meanings of the term and the criteria for choosing the appropriate equivalent by the translator, we have analyzed the basic terminology on acoustics and mechanical vibrations of a centrifugal pump taken fromthe handbook of Chelyabinsk enterprise JSC "KONAR" – Termomeccanica Centrifugal Pump Handbook (Table 01).

Table 01. Acoustics of the centrifugal pump. Basic terms (Thermomeccanica Centrifugal pump handbook, 2003, p. 105)

Source language	Target language
Acoustic vibrations	звуковые колебания
Noise	Шум
Sound power	акустическая мощность
Sound intensity	интенсивность звука
Sound pressure	звуковое давление
Sound pressure level	уровень звукового давления
Sound intensity level	уровень интенсивности звука
Frequency spectrum	частотный спектр
Octave band	октавная полоса
A-weighted sound pressure level	уровень звукового давления, скорректированный по шкале А

Acoustic vibrations (звуковыеколебания) are cyclic changes in ambient air pressure (sound waves) with a frequency perceived by the human ear (usually from 30 Hz to 17 kHz). Acoustic in the translation language means «акустический», «звуковой», both in general and technical contexts. Vibration, similarly, in both senses in the Russian language is translated in the same way. Therefore, the translation of the term acoustic vibrations is not difficult (Thermomeccanica Centrifugal pump handbook, 2015, p. 77).

Sound power (акустическаямощность) – energy emitted, transmitted or received as sound waves, P (W). It is determined by sound pressure or sound intensity. Sound has a large number of meanings represented by different parts of speech. As an adjective, it can be translated as «звуковой», «исправный». In this case, the translator relies on technical (special) knowledge and chooses «акустический» (Thermomeccanica Centrifugal pump handbook, 2015, p. 77).

Sound intensity (интенсивностьзвука) – the ratio of the acoustic power transmitted through the surface in the direction of distribution to the area of this surface, I (W / m2). The term sound is translated as a noun. The semantic value is preserved (Thermomeccanica Centrifugal pump handbook, 2015, p. 78).

Sound pressure (звуковоедавление) is the difference between the total pressure obtained during noise generation and the statistical pressure that would be observed in the absence of sound waves. In this case, sound is translated as an adjective, the semantics is still preserved (Thermomeccanica Centrifugal pump handbook, 2015, p. 78).

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7. Conclusion

When translating technical texts special attention should be paid to terms, since they contain key information. Polysemy is the most difficult part for the translator. That is why in order to give a correct translation of the term, it is necessary to determine a certain terminological field it belongs to.

The translator ofoil and gas textsneeds a good knowledge of the technical field. Most of the terms have certain fixed equivalents in the Russian language, that is why it is important to have some knowledge in this field in order not to confuse the meaning of the terms (Golovanova, 2016).

When translating oil and gas terminology, the translator should often resort to such translation methods as calquing, generalization, descriptive translation, and functional substitution (Terskikh, 2016).

Thus, after analyzing the reference book on centrifugal pumps in English and its translation into Russian, we can conclude that the translator needs to have extensive knowledge in this area to correctly understand the context and meaning of a particular term in order to translate it accurately.

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