Features of depreciation of construction machinery and mechanisms

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Abstract. The article considers the issues of depreciation of construction machinery and equipment in the context of the peculiarities of accounting in construction organizations. Existing methods of reflection of depreciation on accounts from the position of objective accounting in construction and requirements of regulatory acts are analyzed. Special attention is given to the factors that determine the choice of the method of reflection of depreciation of construction machinery and equipment on the corresponding accounts and its impact on the calculation of the cost of a construction project in accounting.

1. Introduction

Most commonly, in construction, construction machinery and mechanisms are used including earthmoving and leveller machines (excavators, bulldozers), lifting and transport equipment (tower cranes) and other mechanisms. These vehicles are carried on the balance sheet as property, plant and equipment, and their value is redeemed through depreciation.

According to Position on Accounting in the Russian Federation PBU 10/99 "Expenses of an Organization" (hereinafter referred to as PBU 10/99), expenses on ordinary activities are grouped by the following economic elements: material expenses, labor costs, social contributions, depreciation, other expenses. Thus, depreciation of fixed assets is one of the mandatory elements of costs in accounting.

The place and role of depreciation of fixed assets (hereinafter referred to as "depreciation") in the cost of construction works is determined by the Accounting policy of the organization on the basis of the accounting classification of costs and their reflection on the corresponding accounts. The choice of reflecting depreciation in accounting depends on the specifics of the use of equipment in the construction industry as well as in a particular construction organization. It is also necessary to take into account the main type of activity of the organization, labelling to the type of business (micro, small, middle-sized, large) and other factors.

2. Materials and Methods

All costs in accounting are divided into direct and indirect costs, and their list is established by the accountant himself and fixed in the Accounting Policy. Based on this classification, the actual cost of construction works is formed in the accounting records. For correct reflection of depreciation, it is necessary to understand the principle of division of expenses into direct and indirect and rules of their write-off in the accounting period. Accounting of expenses is carried out in accordance with PBU
10/99 but this normative act does not contain a description of direct and indirect costs. Even though, the Instruction on application of the chart of accounts explicitly states that the debit side of account 20 "Main production" reflects the direct costs associated proximately with the delivery of goods, services and works. To account for direct costs in such organizations, in addition to account 20 “Main production”, one can use account 23 “Auxiliary production”. At the end of the month, direct costs collected from the debit side of account 23 are deducted from its credit side as part of the direct costs of the main production reflected in account 20. In the case of unfinished work, the costs remain in the work in progress.

Indirect costs associated with the management and maintenance of production are debited to account 20 “Main production” from accounts 25 “General production expenses” and 26 “General administrative expenses”. In construction companies, depreciation of construction equipment can be calculated both as direct costs and as indirect costs. The correct inclusion of depreciation in the cost of the construction project is based on specific features of accounting in construction.

Objective accounting in construction with a completed cycle is an important factor affecting the accounting for depreciation. Position on Accounting in the Russian Federation PBU 2/2008 “Accounting for construction contracts” (hereinafter referred to as PBU 2/2008) contains a requirement that the accounting of income, expenses and financial results should be carried out separately for each executed contract. Since all direct costs are collected in account 20 "Main production", analytical accounts for each object of accounting are opened to it. Unlike accounting in production, where finished products are regularly created, all construction works have a different end date, after which the constructional project is delivered. Data remains recorded and stored for at least 5 years, but is not used in current activities. After completion of work, it is necessary to transfer depreciation charges to another project, and therefore change the analytical accounting to account 20 “Main production”.

There are a number of factors that influence depreciation in the construction industry, which makes it difficult to reflect it as direct costs:
- Primarily, construction equipment is used in many projects during the same reporting period.
- It is necessary to close the construction project after its delivery.
- Construction work is irregular and may depend on geographical location and weather conditions.
- Construction equipment might stand idle without operation in the winter and not be used for a long time.
- A large volume of work in progress.

In the first case, when construction equipment is used simultaneously in several objects, it is impossible to attribute all depreciation to only one object. One way out is to use coefficients that allow you to distribute depreciation between objects in proportion to any measurement. For construction equipment, this measurement is a machine-hour. In accordance with the Methodology for Determining the Cost of Construction Products in the Russian Federation MDS 81-35.2004, the cost of one machine-hour of construction machinery operation is determined by the following formula:

\[ C_{mh} = D + R + W + E + L + H + M + R_l, \]  \( (1) \)

Where:
- \( C_{mh} \) is the cost in rubles of 1 machine-hour of operation of a construction machine;
- \( D \) is the amount of fixed operating costs, regulatory depreciation for the full restoration of machines (rub. / 1 m.-h.);
- \( R \) is the remuneration of workers operating construction machines (rub. / 1 m.-h.);
- \( W \) is the cost of replacing wearing parts (rub. / 1 m.-h.);
- \( E \) are energy costs (rub. / 1 m.-h.);
- \( L \) are lubricant costs (rub. / 1 m.-h.);
- \( H \) are hydraulic fluid costs (rub. / 1 m.-h.);
- \( M \) are costs of all types of machine repairs, their maintenance and diagnosis (rub. / 1 m.-h.).
Rl - the cost of relocating machines from one construction site (service station) to another construction site, (rub. / 1 m.-h.) [4].

The regulatory depreciation deductions for the full restoration of machines included in the above formula are determined by the following formula:

\[ D = \frac{BRd}{100 Om} \]  

Where:
- B is balance sheet (inventory) value of the machine (in rubles);
- Rd is an annual rate of depreciation for full restoration of this type of construction machinery (% / year);
- Om is a normative annual operating mode of the machine (m.-h. / year) [4].

Thus, in the estimates for the construction machines and mechanisms used in the construction of an object, the cost of one machine-hour of operation of construction machines is calculated, and the number of machine-hours is indicated. These indicators can be used as the basis for the distribution of depreciation in accounting.

When using the coefficient method in forming the cost of each object, depreciation is included in direct costs and its reflection has an economic justification.

The disadvantage of this method lies in its complexity, since for each object every month it is necessary to make a new calculation. Even with automation of accounting, this problem is solved almost manually. Therefore, this method can be applied to a small number of construction equipment and facilities, that is, in small construction organizations.

Much more problems in accounting arise if construction equipment is temporarily not used. Such situations may arise when work on the construction of an object is completed as well as during periods of downtime on reasonable grounds.

In accounting, it is necessary to be guided only by regulatory acts. When calculating depreciation, only those methods should be applied that are prescribed in Position on Accounting in the Russian Federation PBU 6/01 “Accounting for fixed assets”.

In the period when machinery and equipment are idle and are not used in construction work, in accordance with PBU 6/01, depreciation continues to be calculated on a monthly basis, regardless of the organization’s performance in the reporting period and is reflected in the accounting of the reporting period to which it relates [4].

This process can be interrupted only in exceptional cases, which include the transfer of fixed assets by decision of the head of the organization for conservation for a period exceeding three months, as well as during the period of restoration of the object, the duration of which exceeds 12 months [4].

However, in the case of idle machinery or equipment due to the absence of an object of accounting, depreciation cannot be amortized on account 20 ”Main production”. Change of the object of accounting is a characteristic feature of objective accounting in construction. This makes it significantly difficult to reflect the depreciation of construction equipment as part of direct costs on account 20 “Main production” in order to meet the requirements of PBU 10/99 “Expenses of an Organization” on the constant depreciation, regardless of the intention to receive income.

Attempts to include depreciation of construction machinery in indirect expenses using account 25 ”General production expenses” do not comply with the economic approach to calculating the cost of construction works. Participation of construction machinery in a particular construction project implies that its depreciation should be included in direct costs. In addition, the use of indirect expense account 25 “General production costs” also presupposes the presence of a construction project, the cost of which should include these expenses at the end of the month. If, nevertheless, it was decided to use the indirect expense account to calculate the depreciation of construction equipment, then depreciation charges may be included in the cost of the object in which this construction equipment is not used.

Incorrect calculation of depreciation may lead to distortion of the cost of construction works, and consequently, to incorrect calculation of the financial result. Moreover, depreciation affects the calculation of income tax. In tax accounting the necessity of division of production costs is specified
in Article 318 of the Tax Code of the Russian Federation. Amounts accrued depreciation on fixed assets used in the delivery of goods, services and works are classified as direct costs. Article 318 of the Tax Code of the Russian Federation provides a list of recommended items of direct costs but since the organization independently determines the list of direct costs associated with the delivery of goods, services and works in the accounting policy for the purposes of taxation, there is no prohibition on attributing depreciation of construction machinery and equipment to indirect costs.

Nevertheless, although the organization independently establishes a list of direct costs, both in accounting and tax accounting, but from the point of view of the tax authorities, depreciation of construction equipment should be included in direct costs. The existing judicial practice has precedents when the courts indicated that an organization is not entitled to consider as indirect expenses the depreciation amounts accrued on fixed assets, which in turn are involved in the production of goods and the performance of work.

Many questions arise in the distribution of direct costs between completed work and work in progress. In construction, work in progress refers to work in progress as of the reporting date or to work not accepted by the customer. The assessment of work in progress is carried out on the basis of the Accounting Policy adopted by the organization but in accordance with the requirements of PBU 2/2008 which defines the revenue and expenses in the “percentage-of-completion method”. The degree of completion of a contract is determined by one of two methods: revenue-based or expense-based.

In the first case, it is necessary to draw up an act on acceptance of completed work on a monthly basis in the KS-2 form on the basis of a work completion log in the KS-6a form, which should reflect the volume of work performed in physical and value terms from the beginning of construction to its completion.

In the latter case, the expenses incurred as of the reporting date shall be calculated only for the works performed.

If it is not possible to divide depreciation costs directly between the objects, they should be divided proportionally to any indicator specified in the Accounting Policy of the Company for accounting purposes such as the contractual value of orders or their estimated cost.

In addition, it is necessary to take into account the requirements of the Tax Code of the Russian Federation for the allocation of direct costs between finished work and work in progress. Paragraph 1 of Art. 319 of the Tax Code provides that when direct costs cannot be attributed to a particular production process for the delivery of this type of products (works, services), the taxpayer must independently establish the method of distribution of such direct costs applying economically justified indicators.

3. Results
In this case, it is proposed to use account 23 “Auxiliary production” to reflect the depreciation of construction machinery and equipment as part of direct costs. According to the Chart of Accounts, account 23 "Auxiliary production" reflects direct costs, which are written off to expense accounts as the work is performed. All costs of maintenance and servicing of construction machinery can be separated from other costs by creating a separate section where construction equipment is accounted for. Thus, monthly depreciation will be deducted from the credit side of account 02 “Depreciation of fixed assets” to the debit side of account 23 “Auxiliary production”. Costs (including depreciation) for the maintenance and operation of construction machinery and equipment should be written off to the costs of the main production in accordance with established indicators as they participate in the construction of the object. Such an approach will bring accounting and management accounting closer to each other and will allow calculating the amounts of depreciation charges in the cost of specific construction works.

In the case of work in progress at the reporting date, the costs associated with it will be accounted for in the debit side of account 23 until the facility is commissioned.
During the period of machinery downtime, expenses of auxiliary production can be written off to account 91.2 “Other expenses”, which does not contradict the instructions for applying the chart of accounts.

Accounting for depreciation of construction machinery and equipment as part of direct costs on account 23 “Auxiliary production” will also eliminate the difference between accounting and tax accounting.

Comparison of the accounting methodology using accounts 20 “Main production” and 23 “Auxiliary production” is presented in table 1.

**Table 1.** Comparison of the accounting methodology using accounts 20 “Main production” and 23 “Auxiliary production”.

| Accounting Features | Account application 20 | Application Account 23 |
|---------------------|------------------------|------------------------|
| Construction equipment is used in many projects during the same reporting period | The use of coefficients that allow for the allocation of depreciation between objects in proportion to any indicator. Maintenance of analytical accounting for each object. Dt20 "Object" Kt 02. For uncompleted objects depreciation remains as part of the direct costs on account 20. | Accrual of depreciation on a monthly basis. Dt23 Kt 02. At the end of the month write off as participation in the construction of the facility in accordance with the established indicators. Dt20 "Object" Kt23. For unfinished objects depreciation remains as part of the direct costs on account 23. |
| Closing the construction object after its completion. | Transfer of depreciation accrual method to another analytical account 20 “Object”. | The depreciation method does not change. The object of write-off is changed at the end of the month. Dt20 "Object" Kt23. During the period of equipment downtime, expenses of auxiliary production can be written off to account 91.2 “Other expenses”. |
| The irregularity of construction works, their dependence on geographical location and weather conditions, when construction equipment can stand idle without operation in winter and not be used for a long time. | In case of non-use of construction equipment or its absence, transfer of the method of depreciation to another expense account. | |

4. Conclusion

Thus, the peculiarities of objective accounting in construction and limited time of construction works lead to the need for a thorough approach to determining the method of accounting for depreciation of construction machinery and equipment. The economic essence of depreciation charges, which are one of the main cost elements in the structure of the cost of construction works, determines the classification of depreciation of construction equipment to direct costs. Accrual of depreciation on account 23 "Auxiliary production" allows to take it into account as a part of direct expenses during the period of use in construction, and eliminates depreciation from the composition of expenses for main activities during an idle time.

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