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## **BUSINESS ACCOUNTING OF EXPENSES ON MACHINE AND TRACTOR FLEET AND IMPROVEMENT OF ITS DOCUMENTARY SUPPORT**

*The article considers the issues of formation of accounting the information on expenses of machine and tractor fleet at farm enterprises. The reasonability and opportunity of eliminating the detected drawbacks in performing business accounting in the sphere under research have been substantiated. The measures to optimize documentary support and improve analytical accounting have been developed.*

**Key words:** *accounting; production expenses; machine and tractor fleet; primary accounting.*

**Fig.1. Lit. 17.**

## **Світлана О. Михайловина, Олена Г. Шайко, Наталія В. Оляднічук БУХГАЛТЕРСЬКИЙ ОБЛІК ВИТРАТ НА МАШИНО-ТРАКТОРНИЙ ПАРК СІЛЬГОСППІДПРИЄМСТВ ТА УДОСКОНАЛЕННЯ ЙОГО ДОКУМЕНТАЛЬНОГО ЗАБЕЗПЕЧЕННЯ**

*У статті розглянуто проблеми формування у бухгалтерському обліку інформації про витрати машинно-тракторного парку в сільськогосподарських підприємствах. Обґрунтовано доцільність та можливість усунення виявлених недоліків в обліковій роботі на даній ділянці. Розроблено заходи щодо оптимізації документального забезпечення та удосконалення аналітичного обліку.*

**Ключові слова:** *облік; витрати виробництва; машинно-тракторний парк; первинний облік.*

## **Светлана А. Михайловина, Елена Г. Шайко, Наталия В. Олядничук БУХГАЛТЕРСКИЙ УЧЕТ ИЗДЕРЖЕК НА МАШИННО- ТРАКТОРНЫЙ ПАРК СЕЛЬХОЗПРЕДПРИЯТИЙ И СОВЕРШЕНСТВОВАНИЕ ЕГО ДОКУМЕНТАЛЬНОГО ОБЕСПЕЧЕНИЯ**

*В статье рассмотрены проблемы формирования в бухгалтерском учете информации о расходах машинно-тракторного парка в сельскохозяйственных предприятиях. Обоснована целесообразность и возможность устранения выявленных недостатков в учетной работе на данном участке. Разработаны мероприятия по оптимизации документального обеспечения и совершенствования аналитического учета.*

**Ключевые слова:** *учет; издержки производства; машинно-тракторный парк; первичный учет.*

**Problem Statement.** Machine and tractor fleet is an important component of material and technical basis of farm enterprises. Its strengthening and use of the available machines are becoming especially significant. Expanding of machine and tractor fleet expectedly involves certain increase of expenses connected with its maintenance and operation.

At farm enterprises tractors fulfill both hauling operations and agricultural work

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where a significant part of works is carried out by one and the same tractors. Machine and tractor fleet can be used both as that belonging to a farm enterprise and the one which is owned by a service providing enterprise.

The efficient use of machine and tractor fleet depends on progressive forms of organizing its operation, improvement of methods of analysis and development of measures to ensure the improvement of planning and managing production activity. In this connection the issues of improving the quality and rapid accounting of machine and tractor fleet work are becoming of primary significance. The organization of work of machine and tractor fleet has always been a challenging issue which provoked discussions among research workers and experts. At the majority of farm enterprises machine and tractor fleet remains a separate business unit which has specific peculiarities that is carrying out field works and hauling operations by one and the same items of agricultural machinery which gives rise to a number of questions concerning primary and consolidated accounting of the given subdivision.

At present actual organizational forms of work of machine and tractor fleet and their documentary support are the matters of critical appraisal of practicing accountants. Current normative documents can be effective at small-scale enterprises where agricultural machinery is available in small quantities and its application is carried out in the complex of technological operations in cultivation of particular crops or performing typical operations. At the enterprise which owns a significant number of machinery it is necessary to use such accounting system which would ensure efficient management and control of fuel use, amount and quality of executed work and provided services, running machinery and farm equipment according to technical characteristics, use of work hours and payroll accounting taking into consideration the quality of the fulfilled work and workers' qualification, conditions of collective labor agreements, etc.

**Analysis of latest research and publications.** Problems of organizing the work of machine and tractor fleet and accounting the production expenses at farm enterprises are researched by a wide circle of research workers and they have been elucidated in the works by V.H.Andriychuk (2013), V.M.Zhuk (2007),

H.H.Kireitsev (2013), M.F.Ohiichuk (2005), O.L.Prymachenko (2002, 2004), V.V.Sopko (2006), S.V.Stender (2006), I.H.Tyvonenko (2002) and others, including foreign editions (A. Bhimani, C.T. Horngren, S.M. Datar, G. Foster (2008), D.R. Hansen, M.M. Mowen (2008), (SFAC).

Theoretical provisions referring to normative and legislative basis considered in the works by national research workers as well as practical activity of farm enterprises prove that, in the conditions of reforming farm production and accounting system, the issues of organizing accounting of expenses on servicing and maintenance of machine and tractor fleet, methods of distribution of expenses between agricultural and hauling operations, operational analysis of using machine and tractor fleet require further research and development of new ideas on their improvement.

**Unsolved problem parts.** The issues of accounting of machine and tractor fleet expenses are researched insufficiently, besides, performance records, provision of services fulfilled by leased tractors and agricultural machines are not highlighted in experts' publications. To describe the evaluating and analytical functions of business accounting it is necessary to carry out an in-depth analysis of formation of expenses according to articles and elements in compliance with leasing operations.

**Aim of the article** – the research of the state of accounting of machine and tractor fleet expenses at farm enterprises, detecting drawbacks in accounting system in the area under research, development of measures to optimize documentary support and improvement of accounting

Methodological basis for the study of accounting of expenses of machine and tractor fleet at farm enterprises is the normative and legislative basis in effect, works by national and foreign researchers on the given subject. In the course of the research a system approach was applied as well as abstract-logical and monographic methods of conducting economic research.

**Main research results.** Production of crop products is fulfilled under complex mechanization of production processes during growing crops, their tending and harvesting. However, insufficient supply of most farm enterprises with machinery

does not make it possible to ensure field works in optimal terms. Therefore, strengthening of material and technical basis of farm enterprises is an urgent issue of nowadays. Expenses of machine and tractor fleet make a considerable part in the structure of the product prime cost. That is why one of the measures to make the prime cost of crop product lower is optimization of the structure of production expenses, particularly, in the part of expenses in servicing and maintenance of machine and tractor fleet.

Prime cost as an economic category shows the expenses on producing the products not directly in working hours but indirectly in money form. That is, prime cost is an enterprise's expenses in money form, refund of which is a necessary part of usual renewal.

Introduction of national provisions (standards) of accounting changed the structure of production expenses which are included in the product prime cost. According to P(s)BA 16 "Expenses" product prime cost is determined in accounting by partial expenses that is they are the amount which is not equal to expenses on its production. They differ in the amount of constant unappropriated general and non-standard expenses of production

In our view machine and tractor fleet cannot be referred to auxiliary production as its distinctive feature is the fact that it ensures carrying out of the main technological processes of farm production and therefore it is an inseparable part of main production. The formation of accounting of expenses on servicing and maintenance of machine and tractor fleet greatly depends on organizational and technological forms of its use. Each enterprise has to organize accounting of running machine and tractor fleet taking into consideration the following factors:

- size and structure of the enterprise which runs the machinery;
- quantitative and qualitative composition of machine and tractor fleet;
- forms of machine and tractor fleet use;
- maintenance system;
- production activity profile;
- organization of operations control service;

- organization of accounting work and introduction of automated accounting etc.

The basis of formation of analytical accounting of any production is the object of accounting. The objects of accounting of expenses were systematized and specified basing on the analysis of organizational and technological peculiarities of using machine and tractor fleet at farm enterprises depending on the enterprise size and the necessity for the introduction of accounting of expenses of machine and tractor fleet at small-scale and middle-scale enterprises was specified by the following objects:

- expenses on running machine and tractor fleet at agricultural works;

- expenses on running machine and tractor fleet at hauling operations; general expenses on running machine and tractor fleet;

- expenses on maintaining combine harvesters and mechanical vehicles.

Organization of accounting of expenses by costing items is of great significance for the control of using machine and tractor fleet. In accordance with P(S)BA 16 “Expenses” the list and composition of articles of accounting of expenses is established by the enterprise itself. The main criteria for the establishing the article is the importance of certain expenses in the formation of product prime cost (operations, services) and the article’s role as the basis for the distribution of some other expenses. The foreseen by the Methodological recommendations on accounting planning and product (operations and services) prime cost calculations list of expenses on servicing and maintenance of machine and tractor fleet is insufficiently substantiated and requires detailing.

At large-scale farm enterprises where machine and tractor fleet is separated into an independent business unit, to do the accounting of expenses on servicing and maintenance of machine and tractor fleet (including the expenses on agricultural operations) it is necessary to distinguish such sub-ledger accounts:

1) machinery depreciation (accumulated depreciation is entered according to the types of machinery by cumulative wear from the beginning of a year and at the end of a year it is distributed between agricultural and hauling operations proportionally to the established basis);

2) expenses on current repair, maintenance and machinery testing (expenses on repair, maintenance and servicing of the main means of machine and tractor fleet are entered. At the end of a year these are distributed proportionally to the established basis);

3) general expenses on servicing and maintenance of machine and tractor fleet (cost of operations and services provided by auxiliary production facilities belonging to both the enterprise itself and other organizations; cost and wear of low-value assets, tools, working clothing; accrued bonuses for saving fuel and other material resources, longevity bonuses, fringe benefit expenses, construction and temporary structures maintenance expenses, other expenses.);

4) expenses on servicing and maintenance of machine and tractor fleet during agricultural operations (labor expenses, labor compensation deductions, fuel-and-oil materials for agricultural operations deductions are booked. During a year these expenses are entered in transit to the corresponding objects of accounting of expenses in crop production. At the end of a year a certain amount of expenses on servicing and maintenance of machine and tractor fleet, carried on first, second and third sub-ledger accounts, is recorded in this sub-ledger account as well);

5) expenses on servicing and maintenance of machine and tractor fleet during hauling operations (labor expenses, labor compensation deductions, fuel-and-oil materials for tractor hauling operations deductions are booked. At the end of a year a part of expenses on servicing and maintenance of machine and tractor fleet, carried on first, second and third sub-ledger accounts, is written down in this sub-ledger account and fulfilled operations costing is carried out).

At large-scale enterprises the suggested accounting system will make it possible to:

- accumulate all the expenses on servicing and maintenance of machine and tractor fleet on account 235;

- record and distribute expenses on servicing and maintenance of machine and tractor fleet respectively on agricultural and hauling operations in economically grounded way;

- ensure accurate accounting of expenses according to the established list of items at mechanical operations in crop production;
- ensure sufficiently high analyticity of accounting.

Besides, to improve the information support of the process of managing expenses it is reasonable to open:

1) sub-ledger account 235.1 "Expenses of machine and tractor fleet"

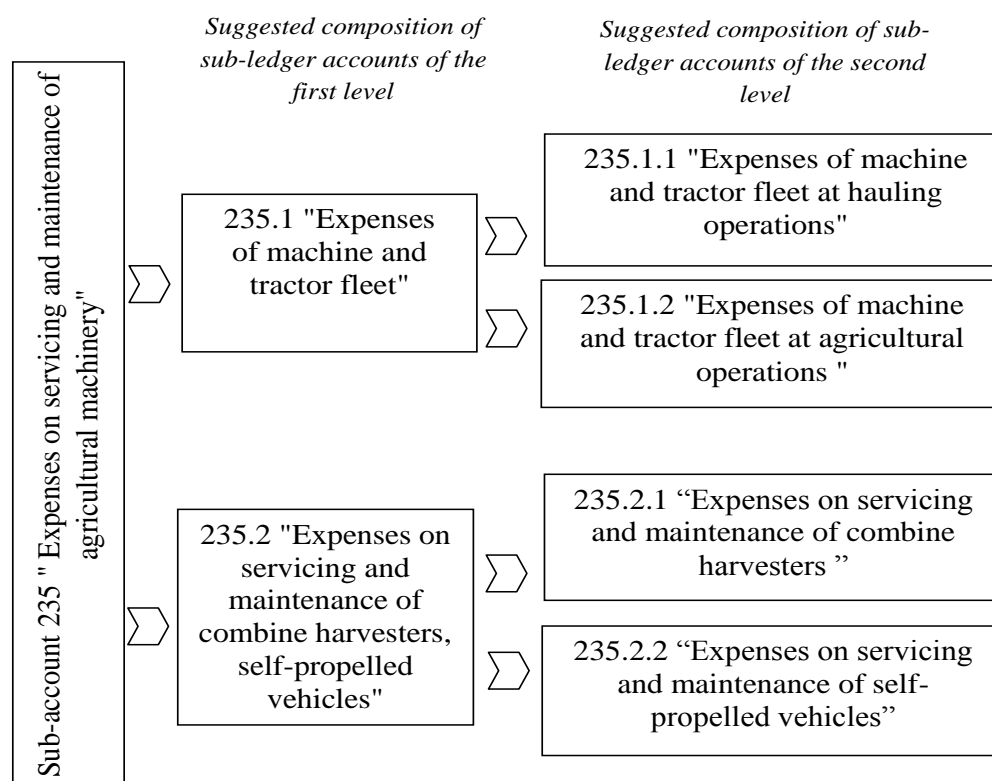
(235.1.1 "Expenses of machine and tractor fleet at hauling operations";  
235.1.2 "Expenses of machine and tractor fleet at agricultural operations ")

a) sub-ledger account 235.2 "Expenses on servicing and maintenance of combine harvesters, self-propelled vehicles"

(235.2.1 " Expenses on servicing and maintenance of combine harvesters ";

235.2.2 " Expenses on servicing and maintenance of self-propelled vehicles ")

The suggested composition of sub-ledger accounts in sub-account 235 " Expenses on servicing and maintenance of agricultural machinery" is briefly depicted on fig.1.



**Fig.1. Suggested composition of sub-ledger accounts for representing expenses on servicing and maintenance of machine and tractor fleet in business accounting, developed by the authors**

At small-scale farm enterprises in order to facilitate accounting of expenses on servicing and maintenance of machine and tractor fleet it is reasonable to record all expenses only according to elements of cost without distinguishing machine and tractor fleet into a separate object of cost accounting. While allocating general expenses on servicing and maintenance of machine and tractor fleet between agricultural and hauling operations (proportionately with relative standard hectares) a contradiction arises in practice: depreciation of seed drills, ploughs, sprayers, mineral fertilizer spreaders etc., that is the machinery which carries out only agricultural operations, is referred to hauling tractor operations. Therefore, it is reasonable to allocate first the depreciation of the main means of machine and tractor fleet between agricultural and hauling operations proportionately with the established basis (relative working hours, area of cultivation, and amount of fertilizers).

The organization of accounting of machine and tractor fleet work has always been a topical issue. Despite a rapid process of depreciating of obsolete and depreciated machinery, accounting issues require rethinking and improvement. In this connection primary and consolidated accounting of business operations is an inseparable part and fundamental principle of accounting.

Production activity of an enterprise involves carrying out the array of business operations which are recorded in primary documents specially designed for it. According to the Law of Ukraine “On Accounting and Financial Data Reporting in Ukraine” “primary document is a document which keeps the information on business operation and proves its carrying out” (Law of Ukraine,1999), that is accounting information, which is kept in primary accounting documents, is expected to fully reveal the subject of the conducted operation. Consolidated accounting generalizes the information of primary documents which makes it possible to receive consolidated indices at the end of the accounting reference period. So, primary accounting is the initial stage of business accounting and consolidated accounting is an intermediary part of accounting which forms information arrays for carrying out analytical and synthetic (generalizing) accounting of business operations.

The received accounting information has to be authoritative, comprehensive, full and latest update so; such information storage media – primary documents – should be represented in a proper way. One of the main principles of accounting and financial data reporting is prevailing of its core over the form which means accounting of operations according to their subject matter and not only the legal form. Therefore, the information, which is recorded in primary documents, has to reflect the whole business operation procedure beginning with entering obligatory requisite details and finishing with mathematic calculations and analytical notes.

A business operation which is not represented in a primary document but recorded in business accounting is illegal. Representing information on a business operation in a primary document is the ground for conducting control of production activity and its analysis. Besides, a primary document is a written first-hand account of conducting the operation and proof of its validity.

The content of a primary document is determined by the fact of a business operation which is fixed in it and the subject matter of a business activity is the result of task-oriented activity of a person who makes a primary document. So, a primary document and business activity are closely connected economic categories.

The provisions on documentary support of records in business accounting regulate the recording of business operations and their representing in primary and consolidated documents.

The analysis of the studies of documentation of operations on executed work accounting, accrued labor payment and fuel-and-oil material expenditure established that a tractor driver's accounting sheet does not fully meet modern requirements as to the formation of accounting and analytical information.

The main primary document for recording performance of tractors, combine harvesters and other self-propelled vehicles is the Accounting sheet of a tractor driver (f. № PSH-3). This sheet is open for 5, 10 or 15 days. In the document a foreman or an accountant fixes the date, № field, crop, types of executed every day operations, amounts in actual size (ha) and transferred into relative hectares, output norm, cost sheet, actual performance, amount of accrued basic and extra wage. Also, the

Accounting sheet contains the information on the amount of used fuel by norm and actual state. After filling in the sheet the results are summed up according to particular indices and it is sent to the accounting department to be included into production costs, labor enumeration and fuel writing off. The document is signed by a tractor driver, agronomist, and foreman. Final data in each Accounting sheet of a tractor driver are transferred to the Final statement of recording of using the machine and tractor fleet (f. № ZhN-5) and to the Register of performance and expenses recording (f. № ZhN-4), where these indices are accumulated and summed up.

As the Accounting sheet of a tractor driver is intended only for one worker, we consider the line “employee ID” to be odd, in the part of recording fuel expenditure by norm and actual state it is reasonable to add the line “divergence from a norm, +/-“, which will give the opportunity to receive the information on fuel saving (excess expenditure) by each primary document.

Similar section “divergence from a norm, +/-“ is reasonable to introduce into the Final statement of accounting of machine and tractor fleet use and the Register of performance and expenses recording. Besides, the Final statement lacks the section of accounting the amount of executed work (actual and relative hectares).

In our opinion the tabulated document of accounting machine and tractor fleet work has to be only the Final statement of accounting of machine and tractor fleet use (f. ZhN-5), as the Register of performance and expenses recording (f. № ZhN-4) practically duplicates the accounting information of the Final statement. The Register of performance and expenses recording is better for accumulating the data on executing manual (hand) types of work. It will make it possible to avoid double accounting and save time for processing this document (due to simplification and unification of the typical form).

**Conclusions.** The objects of accounting of expenses of machine and tractor fleet established that expenses should be grouped in the following way: expenses on servicing and maintenance of machine and tractor fleet at agricultural operations; expenses on servicing and maintenance of machine and tractor fleet at hauling operations; general expenses on servicing and maintenance of machine and tractor

fleet; expenses on servicing and maintenance of combine harvesters and self-propelled vehicles.

The suggested improvements on the unification of forms of primary and consolidated accounting of machine and tractor fleet operation make it possible to increase the productivity of accountants' work and improve the quality of accounting and economic information. In addition, in the process of automation of accounting our suggestions will ensure the decrease of labor input in the information processing and increase the operational efficiency of business accounting in general.

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