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Главная цель журнала заключается в публикации оригинальных статей, преимущественно научного и научно-технического направления, предоставлении научной общественности, научно-производственным предприятиям, представителям бизнес-структур, а также студентам, магистрантам и докторантам вузов возможность знакомиться с результатами научных исследований и прикладных разработок по ключевым проблемам в области передовых технологий.

Задачи журнала состоят:

- в предоставлении ученым возможности публикации результатов своих исследований по научным и научно-техническим направлениям;
- достижении международного уровня научных публикаций журнала;
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RISK AND WAYS TO REDUCE IT

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Annotation: The relevance of this topic lies in the fact that in the modern conditions of the development of competitive relations between economic entities, the impact of risks on the efficiency of companies has significantly increased. Therefore, the study of business risks, their management and methods of prevention are important. There are many different methods of risk management. At the present stage of economic development, various domestic and Western researchers have developed specific preferences regarding risk management methods. These methods are determined by the nature of the economic development of the state, as well as by the groups of risks studied

Key words: Risk, entrepreneurship, regulatory method, insurance, hedging, diversification, standard deviation, coefficient, differential function, Gaussian curve, probability distribution, strategy.

РИСК И СПОСОБЫ ЕГО СНИЖЕНИЯ

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Аннотация: Актуальность данной темы заключается в том, что в современных условиях развития конкурентных отношений между хозяйствующими субъектами значительно возросло влияние рисков на эффективность компаний. Поэтому изучение бизнес-рисков, их управление и методы предотвращения имеют важное значение. Существует много различных методов управления рисками. На современном этапе экономического развития различные отечественные и западные исследователи выработали определенные предпочтения в отношении методов управления рисками. Эти методы определяются характером



экономического развития государства, а также изучаемыми группами рисков

Ключевые слова: Риск, предпринимательство, метод регулирования, страхование, хеджирование, диверсификация, стандартное отклонение, коэффициент, дифференциальная функция, гауссова кривая, распределение вероятностей, стратегия.

Introduction

In the conditions of market relations, the problem of assessing and accounting for economic risk acquires independent theoretical and applied significance as an important component of the theory and practice of management. Most management decisions are made under conditions of risk, which is due to a number of factors-the lack of complete information, the presence of conflicting trends, elements of randomness, etc. In these conditions, there is uncertainty and uncertainty in obtaining the expected final result, the probability of additional costs and losses increases. The problem of risk is of particular importance in entrepreneurial activity. It is known that success in the business world depends crucially on the correctness and validity of the chosen business strategy. At the same time, the probabilities of critical situations should be taken into account. It would be extremely naive to believe that entrepreneurial activity is possible without risk. The legislation on enterprises and entrepreneurial activity adopted in the world practice defines entrepreneurship as an initiative, independent activity citizens and their associations, aimed at making a profit, carried out at their own risk and under their own property responsibility.

Research methodology

An important element of the risk management system is the development of measures to reduce them.

The regulatory method is the establishment of certain standards, limits, restrictions on carrying out certain actions, namely: the establishment of the maximum volume of output, the maximum volume of shipment of products on credit (taking into account the financial situation of consumers), limits on attracting borrowed funds, limits on the volume of investments in a certain field of activity (for specific structural divisions, levels of responsibility, etc.), etc.

The creation of insurance (reserve) funds includes, in particular, the formation of reserve funds for stocks of raw materials, materials and finished products, a reserve balance of funds on the settlement account of the enterprise, a reserve fund for the payment of interest on bonds and dividends on preferred shares, etc. However, it should be borne in mind that the creation of reserve funds slows down the turnover of capital, and therefore leads to a decrease in production efficiency.

The insurance of the interest rate risk that arises when the company issues coupon bonds and is associated with the possibility of losses from a decrease in interest rates, early repayment of bonds, the establishment of a variable (floating) coupon, etc. is used.

Hedging is associated with possible changes in prices for raw materials, finished products, exchange rate fluctuations, etc. Hedging procedures are reduced to the conclusion of fixed-term contracts for the purchase (sale) of products or currency values at fixed yen in the future. The main types of hedging are forward contracts that provide for mutual obligations of the parties to buy and sell products in the future at the prices specified in the contract, as well as forward contracts for currency and currency options.



Diversification is the expansion of technologically diverse areas of activity of the enterprise. It includes the diversification of products, when an enterprise produces a variety of products, some of which are not related to the specialization of production and often require the development of new technologies; the diversification of capital investments by region and type of production; the diversification of financial assets — the acquisition of various types of securities.

Results of the study

In practice, companies use a set of ways to reduce risks, and managers formulate risk management rules based on previous experience:

- you can't risk more than your own capital can afford;
- you need to think about the consequences of risk;
- you can't risk a lot for a little;
- the decision on investment is made only in the absence of doubts;
- if there are doubts, such a decision is not taken;
- we should not assume that there is always only one solution. Perhaps there are

other solutions.

Entrepreneurship, as follows from its definition, is impossible without risk. Therefore, it is important to learn how to manage risks, i.e. analyze, plan and evaluate them.

Analyzes

As noted earlier, one of the most common methods of quantitative risk assessment is the statistical method. The main tools of the statistical method for calculating risk are:

- the average value ($\bar{X}$) of the studied random variable (the consequences of any action, for example, income, profit, etc.);
- variance (σ^2);
- standard (standard deviation) (σ);
- coefficient of variation (V);
- the probability distribution of the studied random variable.

It is known from the theory of statistics that for a limited number (n) of possible values of a random variable, its average value is determined from the expression

$$\bar{X} = \sum_{i=1}^n X_i P_i ,$$

where X_i — the value of a random variable;

P_i — is the probability of occurrence of a random variable.

The average value is a generalized quantitative characteristic of the expected result.

An important characteristic that determines the measure of variability of a possible result is the variance — the weighted average of the squares of the deviations of the actual results from the average

$$\sigma^2 = \sum_{i=1}^n (X_i - \bar{X})^2 P_i ,$$

and also, the very closely related standard deviation determined from the expression

$$\sigma = \sqrt{\sigma^2} = \sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 P_i} .$$

The variance and standard deviation serve as measures of absolute scattering and are measured in the same physical units in which the varying feature is measured.

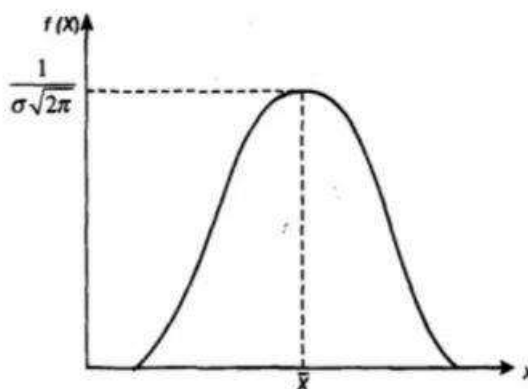
To analyze the measure of variability, the coefficient of variation is often used, which is the ratio of the mean square deviation to the arithmetic mean and shows the degree of deviation of the obtained values. The coefficient of variation is a relative value. Therefore, it can be used to compare the fluctuation of features expressed in different units of measurement.



From the course of probability theory and mathematical statistics, it is known that a normally distributed random variable is continuous and its differential distribution function has the form:

$$y = f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\bar{x})^2}{2\sigma^2}},$$

where $y = f(X)$ – determines the probability distribution density for each point X .
The graph of the normal distribution function is described by the so-called normal curve (Gaussian curve):



To estimate the probability of a random variable falling into a certain interval, the integral probability density function is used:

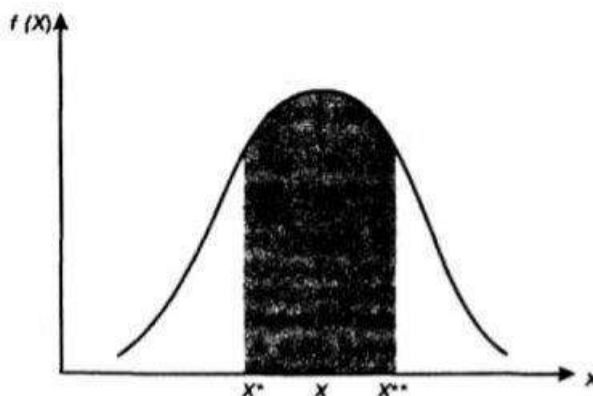
$$\Phi(X) = \int_{-\infty}^X f(t) dt.$$

The probability of a random variable falling into the interval (α, β) is determined as follows:

$$P(\alpha < X < \beta) = \Phi(\beta) - \Phi(\alpha) = \int_{\alpha}^{\beta} f(t) dt,$$

where $f(t)$ – is the differential function of the normal distribution.

Then the boundaries in which this result should be located will be $X^* = X_{exp} - \Delta$;
 $X^{**} = X_{exp} + \Delta$.



Based on the meaning of the distribution density function, the probability that the achieved result will be within acceptable limits (P_1) is determined from the expression

$$P_1 = P(X^* \leq X_{exp} \leq X^{**}) = \int_{X^*}^{X^{**}} f(X) dX,$$

where $f(X)$ – is the density function of the distribution of the studied (considered) quantity.
The desired probability result can be obtained by calculating the area of the shaded area in Fig. 2.



We will call the probability obtained in this way the probability level of achieving the expected (planned) result.

Naturally, the question immediately arises about what is the probability of getting the value of the X_{exp} beyond the permissible limits borders (P_2). Having calculated the area of the uncovered plot in Fig. 2, we get an answer to this question.

Based on the characteristics (properties) of the normal distribution curve, it can be argued that the event consisting in the fact that a random variable will take a value on the interval of the axis X , bounded by a normal curve, is reliable, i.e. its probability is 1.

Then

$$P_2 = P(X_{exp} < X^*) + P(X_{exp} > X^{**}) = 1 - P(X^* \leq X_{exp} \leq X^{**}), \\ P_2 = 1 - P_1.$$

The probability P_2 evaluates the uncertainty of the result.

As a rule, the boundary of the change in the expected result in the positive direction (direction) is not set, therefore, when determining P_2 in most cases, we are talking only about the value $P_2 = P(X_{exp} < X^*)$. Thus, in practice, the figure of the square is always asymmetric.

It should be noted that some authors consider the P_2 value to be a direct risk meter.

Indeed, in relatively simple cases, the probability of obtaining a negative result (P_2) can be used to assess the degree of risk.

However, as follows from the definition of risk considered by us, the essential factors of the concept of risk are not even touched upon here.

Summary and suggestions

Based on the results of our research, we can draw the following conclusions: Risk is a certain probability of the occurrence of adverse factors, due to which both material losses (loss of funds, property, etc.) and physical ones are possible. Risk management methods that are used in business activities are divided into four groups of methods. - risk avoidance; - localization of risks; - risk diversification; - risk compensation. It is necessary to correctly calculate the salary of employees in the organization and take into account the cost of materials. Savings should be appropriate and justified, and the management of financial affairs should be correct. The costs must be justified, it is important to make an assessment of them. If the risk factors of the enterprise are obvious, you can use a loan policy that will save you from bankruptcy to some extent and reduce the risk of the collapse of the enterprise. In order to avoid difficulties in the organization, it is important to give a correct assessment of the activities of competitors. If there is a competitive struggle, you need to come up with your own management plan that will help bring the organization to a higher level. Today, there are many enterprises that compete with domestic or foreign ones. It is important to develop your own management strategy and evaluate it in order to avoid the risk of bankruptcy as much as possible. In conclusion, it should be noted if certain concomitants of bankruptcy are obvious, which are very important to prevent.

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**МЕТОДИКА ПРЕПОДАВАНИЯ МАТЕМАТИКИ ДЛЯ РАЗВИТИЯ
МАТЕМАТИЧЕСКОГО МЫШЛЕНИЯ**

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Аннотация: Данная статья посвящена и интеллектуальному развитию математического мышления. Перед преподаванием математики в школе кроме общих целей обучения стоят ещё свои специфические цели, определяемые особенностями математической науки. Одна из них – это формирование и развитие математического мышления. Это способствует выявлению и более эффективному развитию математических способностей школьников, подготавливает их к творческой деятельности вообще и в математике с ее многочисленными приложениями в частности.

Ключевые слова: Интеллектуальный, развития, мышления, методика.

**METHODOLOGY OF TEACHING MATHEMATICS FOR THE DEVELOPMENT OF
MATHEMATICAL THINKING**

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Annotation: This article is also devoted to the intellectual development of mathematical thinking. Before teaching mathematics at school, in addition to the general goals of teaching, there are also specific goals determined by the characteristics of mathematical science. One of them is the formation and development of mathematical thinking. This contributes to the identification and more effective development of the mathematical abilities of schoolchildren, prepares them for creative activity in general and in mathematics with its many applications in particular.

Key words: Intellectual, development, goals, methodology..



ВВЕДЕНИЕ

Главная задача образовательной цели в Узбекистане это – обеспечить современное качество образования на основе актуальных и перспективных потребностей личности и общества. Качество образования – это его результативность. Результаты проявляются в знаниях, умениях и навыках обучающихся, на их основе ключевых компетенций выпускников. Перед преподаванием математики в школе кроме общих целей обучения стоят ещё свои специфические цели, определяемые особенностями математической науки. Одна из них – это формирование и развитие математического мышления. Это способствует выявлению и более эффективному развитию математических способностей школьников, подготавливает их к творческой деятельности вообще и в математике с ее многочисленными приложениями, в частности. Вообще интеллектуальное развитие школьника можно ускорить по трём направлениям: понятийный строй мышления, речевой интеллект и внутренний план действий.

Я думаю, что одним из вариантов решения данных вопросов является использование методики в образовательном процессе. Слово «методика» в переводе с древнегреческого означает «способ познания», «путь исследования». Метод - это способ достижения какой-либо цели, решения конкретной учебной задачи.

Существуют разные точки зрения на содержание понятия «методика». Одни, признавая методику наукой педагогической, рассматривали ее как частную дидактику с общими для всех предметов принципами обучения. Другие считали методику специальной педагогической наукой, решающей все задачи обучения и развития личности через содержание предмета. Приведем несколько примеров определений.

Методика обучения математике – это педагогическая наука о задачах, содержании и методах обучения математике. Она изучает и исследует процесс обучения математике в целях повышения его эффективности и качества. Методика обучения математике рассматривает вопрос о том, как надо преподавать математику.

Методика преподавания математики - раздел педагогики, исследующий закономерности обучения математике на определенном уровне ее развития в соответствии с целями обучения подрастающего поколения, поставленными обществом. Методика обучения математике призвана исследовать проблемы математического образования, обучения математике и математического воспитания.

Методика преподавания математики в средней школе возникла с целью поиска педагогически целесообразных путей и способов изложения учебного материала. Методика преподавания математики начала разрабатываться чешским учёным Я.А. Коменским. Методика обучения математике впервые выделилась как самостоятельная дисциплина в книге швейцарского учёного И.Г. Песталоцци «Наглядное учение о числе» (1803, русский перевод 1806).

Цель методики обучения математике заключается в исследовании основных компонентов системы обучения математике в школе и связей между ними. Под основными компонентами понимаются: цели, содержание, методы, формы и средства обучения математике.

Предмет методики обучения математике отличается исключительной сложностью. Предметом методики обучения математике является обучение математике, состоящее из



целей и содержания математического образования, методов, средств, форм обучения математике.

На функционирование системы обучения математике оказывает влияние ряд факторов: общие цели образования, гуманизация и гуманитаризация образования, развитие математики как науки, прикладная и практическая направленность математики, новые образовательные идеи и технологии, результаты исследований в психологии, дидактике, логике и т.д. Совокупность этих факторов образует внешнюю среду, которая оказывает непосредственное влияние на систему обучения математике. Многие компоненты внешней среды воздействуют на нее через цели обучения математике.

Методика преподавания математики претерпевает в своем развитии большие трудности, прежде всего, из-за сложностей преодоления разрыва между школьной математикой и математической наукой, а также из-за того, что она является пограничным разделом педагогики на стыке философии, математики, логики, психологии, биологии, кибернетики и, кроме того, искусства.

В методике преподавания математики, в практике обучения предмету находят свое отражение особенности многовековой истории развития математики от глубокой древности до наших дней. Для глубокого понимания методических закономерностей школьникам необходимо знать историю развития методики преподавания математики.

ИСПОЛЬЗОВАННАЯ ЛИТЕРАТУРА

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ADVANTAGES AND DISADVANTAGES OF CARGO LAGGAGE CARRIAGE BY RAILWAY TRANSPORT

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Annotation: This article deals with the advantages and disadvantages of transport cargo luggage on the railway transport. The example shows the amount of the fares change for transportation and the speed of freight delivery during the small-lot transportation. The result suggested that one of the effective ways to improve the use of the carriage and container parks and to accelerate the freight delivery is an organization of the container transportation as a part of the postal and baggage trains.

Key words: inventory fleet of cars, industrial enterprise, shunting work, car traffic, freight traffic.

ДОСТОИНСТВА И НЕДОСТАТКИ ПЕРЕВОЗОК ГРУЗОБАГАЖА НА ЖЕЛЕЗНОДОРОЖНОМ ТРАНСПОРТЕ

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Аннотация: В этой статье представлены достоинства и недостатки перевозок грузобагажа на железнодорожном транспорте, показано изменение стоимости и скорости перевозки мелких партий грузов на соответствующих примерах. В результате в качестве наиболее удобного и эффективного способа перевозки мелких партий грузов на железнодорожном транспорте предлагается перевозка этих грузов вагонами-контейнерами в составе пассажирских поездов.

Ключевые слова: инвентарный парк вагонов, промышленное предприятие, маневровая работа, вагонопоток, грузопоток.

In recent years, with the development of the country's economy and with the emergence of small and medium-sized firms engaged mainly in trade intermediary operations, the volume of goods sent in small lots has increased. Until recently, most enterprises performed only production operations, not caring about flow management before and after the main production. This was caused by the administrative control system in the country, the lack of competition and market relations. New economic conditions, the formation of the market, the emergence and intensification of competition between enterprises require an active change in their work and an increase in competitiveness by responding to market needs and effectively managing transport and cargo flows. Large enterprises will not be able to sell their products without an extensive distribution network, therefore, it is necessary to ensure their interaction with regional distribution centers. Material and technical supply and marketing should ensure the rational promotion of products from the areas of its production to the areas of consumption and, at the same time, minimizing distribution costs [1]. At the same time, competition with road transport is intensifying in the transportation market, which is ousting railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage transportation by rail with the development of proposals for improving these transportations. Material and technical supply and marketing should ensure the rational promotion of products from the areas of its production to the areas of consumption and, at the same time, minimizing distribution costs [1]. At the same time, competition with road transport is intensifying in the transportation market, which is ousting railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage transportation by rail with the development of proposals for improving these transportations. Material and technical supply and marketing should ensure the rational promotion of products from the areas of its production to the areas of consumption and, at the same time, minimizing distribution costs [1]. At the same time, competition with road transport is intensifying in the transportation market, which is ousting railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage transportation by rail with the development of proposals for improving these transportations. which displaces railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage



transportation by rail with the development of proposals for improving these transportations. which displaces railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage transportation by rail with the development of proposals for improving these transportations.

Determination of effective methods of transportation of cargo and luggage on railway transport

Cargo luggage - an object of railway transportation carried in passenger and mail-luggage trains. Cargo luggage from individuals and legal entities is accepted for transportation with a weight of individual pieces of baggage not exceeding 80 kg per piece between railway stations open for baggage operations. Acceptance from individuals and legal entities for transportation of indivisible pieces of luggage (gas stoves, refrigerators, etc.) weighing up to 165 kg is carried out from and to stations open for cargo-luggage operations with reloading along the route. General baggage and cargo rates apply on all railway lines open for public use and included in permanent operation. The minimum estimated weight for sending baggage and cargo is 10 kg. When calculating the cost of baggage and cargo baggage, the weight of cargo baggage up to 10 kg is rounded up to full 10 kg. The weight of baggage in all cases is rounded up to the full 10 kg. The minimum weight for sending baggage and cargo is 5 kg with payment as for 10 kg [2].

For the transportation of cargo luggage on railway transport, JSC "Uzjeldorpass" has luggage compartments. We analyzed the work of the Tashkent baggage department of Uzzheldorpass OJSC. The result of the analysis showed that the Tashkent baggage department receives income mainly for the transportation of cargo luggage (55-58% of total income) and the amount of transportation increases from year to year. The income of the luggage compartment for the transportation of cargo luggage can be further increased by the use of preferential tariffs in international messages, since the main negative factor in the transportation of these messages is high customs duties.

In local communications, the transportation of cargo and luggage is much easier, i.e. there are no customs fees. For a visual analysis, we have determined fees for the transportation of household appliances weighing 600 kg in containers and in baggage cars.

When transported in universal 3-tonnage containers, the tariff distance is 361 km [3-4]. By distance, we determine the freight charge, according to the appropriate scheme (according to the table), depending on which wagons (that is, the general fleet or owned by enterprises or leased by them) the cargo is transported. Under tariff scheme No. 93, the freight charge is 41 Swiss francs. Frankov [5]. We multiply the received freight charge by a coefficient equal to 0.95 (special discount applied in local traffic), multiply the received amount by the central bank rate for conversion into national currency and then add the VAT coefficient equal to 0.2. The total freight charge is: $41 \times 0.95 \times 2400 \times 1.2 = 112176$ soums. Additional fees for transportation average 125,000 soums. The total cost of transportation of this cargo in universal 3-ton containers is 198416 soums.

The carriage fee for cargo luggage in passenger trains is calculated for each piece of luggage (10 kg). The cost of transportation of household appliances weighing 600 kg from the Tashkent baggage compartment to Samarkand was taken from the software for calculating the freight charge of Uzjeldorpass OJSC. Those. for the considered distance, the cost of transportation of 10 kg of cargo luggage is charged a freight charge of 3056 soums. This cargo occupies $600/10=60$ pieces of luggage. Then the freight charge is

$$Tp.p.=60 \times 3056=183360 \text{ soum}$$



Additional charges for the carriage of cargo luggage in a baggage car are determined for each piece of cargo luggage (80 kg). Then, the considered cargo weighing 600 kg in the baggage car occupies $600/80=8$ baggage pieces. Additional fees are made up of the following amounts:

1. Marking 1st place - 2500 soum. Then $8*2500=20000$ soum.
2. Luggage storage 1 piece per day - 3000 soums. Since the cargo luggage is stored at the starting and ending points, $2*8*3000=48000$ soums are charged for storage.
3. Notification by phone - 1100 soum.
4. Use of cart 1 pc. – 4400 sum. Then $8*4400=35200$ soum.
5. Application form and "inventory" form - 1000 soums. Then $8*1000=8000$ soum.
6. Loading and unloading from 500 kg to 1000 kg - 14800 soum.

As a result, additional fees for the transportation of cargo and luggage amount to 127,100 soums. Then the total cost of cargo transportation in the baggage car is

$$T_{r.c..} = T_{add} + T_{r.p.} = 127100 + 183360 = 310460 \text{ soum.}$$

As a result, we can say that the transportation of household appliances weighing 600 kg, from the point of view of the cost of transportation, should be carried out in universal containers. However, when choosing rational methods of transportation, it is also necessary to take into account the speed of delivery of goods.

In accordance with the Rules for calculating the terms of delivery of goods by rail, the norms for the daily mileage of wagons in kilometers are established, depending on the distance of transportation (Table 1).

Table 1

Norms of daily mileage when transporting wagon, container and small shipments at a freight speed

Transportation distance from to (km.)	Daily mileage (km.)	
	Carriage shipments	Container and small shipments
Up to 99	110	75
200...599	160	75
600...999	240	100
1000...1999	310	140
2000...2999	330	180
3000...4999	380	230
5000...6999	400	270
7000 and above	420	300

The terms of delivery of goods, calculated on the basis of the norms of daily mileage, increase by:

- 2 days - for operations related to the departure and arrival of cargo (a day for the departure railway and a day for the destination railway);
- 1 day - when transporting goods at a distance of up to 1000 km. 2 days for transportation over a distance of more than 1000 km of goods transported in small shipments and in containers for their accumulation and sorting on cargo sorting platforms;



· 1 day - for operations related to the forwarding of wagons; when transferring to another mode of transport; upon acceptance from another mode of transport of goods transported in direct mixed traffic; when determining the weight of the cargo on the wagon scales nearby the departure station of the railway station.

The term of delivery of goods increases for the entire time of delay of goods by customs and other organizations along the route for more than one day of delay of goods along the route to correct loading, eliminate overload of goods, correct the technical or commercial condition that arose for reasons beyond the control of the railway, etc.

In the example under consideration, the distance (S) of cargo transportation is 361 km, it falls within the interval 200 ... 599, therefore, the speed of cargo transportation by containers (V) is 75 km / day.

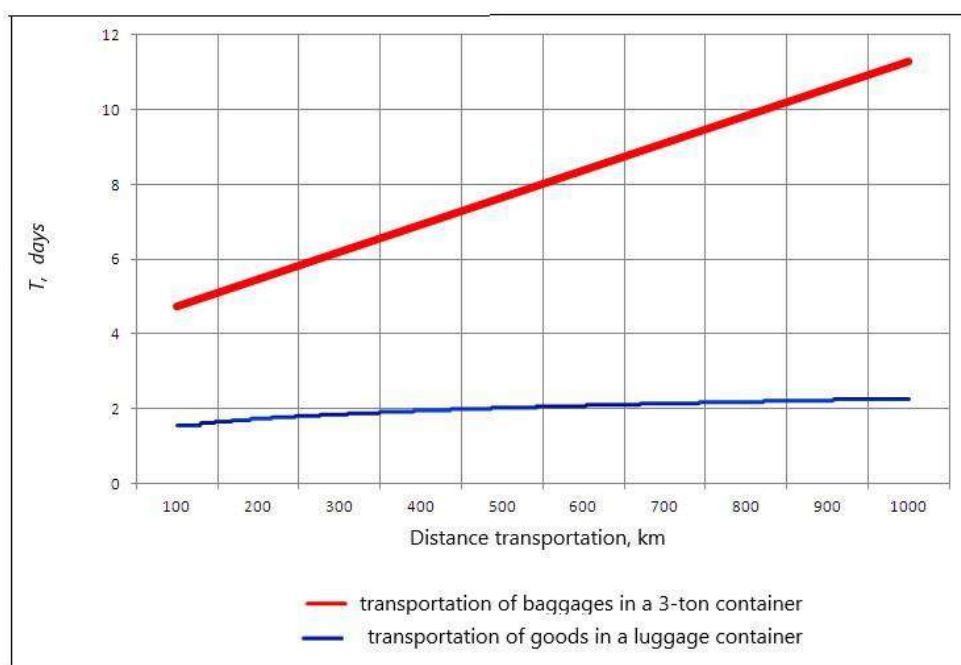
We determine the delivery time by the formula:

$$T = S/V = 361/75 = 4,81 \text{ day}$$

In addition to 4.81 days, we add another 2 days for operations related to the departure and arrival of cargo (a day for the departure railway and a day for the destination railway). In total, the total duration of the cargo delivery time will be equal to:

$$T_{\text{gen.}} = 4,81 + 2 = 6,81 \text{ day.}$$

Thus, we calculated the speed of cargo delivery by containers at a distance of 100 to 1000 km. The speed of delivery of cargo luggage in a baggage car is determined depending on the schedule of passenger trains with baggage cars. The results of comparing the delivery time of goods when transported in a 3-ton container and a baggage car as part of passenger trains are shown in fig. one.



Rice. 1. Comparison of the terms of delivery of goods when transported in a 3-ton container and a baggage car as part of passenger trains.

From fig. 1, it becomes clear why a large number of shippers refuse to transport goods in containers, and transport goods in cars. However, if the goods are transported in baggage cars at



passenger speed, as part of postal-luggage passenger and fast trains, then consignors who have refused railway transport services may again turn to railway services.

Conclusion:

1. The transition of the country's economy to market relations, the introduction of various forms of ownership, influenced the formation of new commercial structures, the emergence of a large number of small enterprises and firms. In the transportation market, competition with road transport is intensifying, which is ousting railways from the sphere of small-lot cargo transportation. All this in aggregate, as well as the need to consider the transportation process from the standpoint of logistics, required a review of the advantages and disadvantages of cargo and luggage transportation by rail.

2. Acceptance of cargo luggage on railway transport is carried out in the luggage compartments of Uzzheldorpass OJSC. The result of the analysis of luggage compartment income showed that the amount of traffic is increasing from year to year. The income of the luggage compartment for the transportation of cargo luggage can be further increased through the use of preferential tariffs in international messages, since the main limiting factor in these messages is high customs duties.

3. Since small-lot cargoes are currently transported by rail transport mainly in postal-baggage cars and in containers of various carrying capacity, it is necessary to compare the cost of transportation and the delivery time of goods when transported in a container and a baggage car as part of passenger trains.

4. The results of comparing the cost of transportation and the delivery time of goods (in the example of household appliances weighing 600 kg) in a container and a baggage car showed that, from the point of view of the cost of transporting small-lot cargo, it is advisable to carry it out in universal containers. However, from the point of view of the delivery time of goods, transportation in baggage cars as part of passenger trains is the most effective, in which the value of the integrated indicator of the quality of transport service is the best.

5. One of the effective ways to improve the use of the wagon and container fleet and speed up the delivery of goods is to organize the transportation of containers as part of mail and baggage trains. The organization of container transportation as part of mail and baggage trains is based on the use of scheduling, coordination of joint activities of railway stations, motor transport enterprises, consignors and consignees.

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**TASHISH HAJMI KAMAYGAN SHAROITDA “ANDIJON-1” STANSIYADAGI
MANYOVR ISHLARINI SAMARALI TASHKIL ETISH**

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Annotatsiya: Tashish hajmi kamaygan sharoitda manyovr lokomotivlari ishini samarali tashkil etish yanada dolzarb vazifa hisoblanadi. Ushbu maqolada “Andijon-1” stansiyada shoxobcha yo‘lini yopish va stansiyaning 12-yo‘lini ortish-tushirish operatsiyalariga berishning manyovr lokomotivlari ishiga ta’siri tadqiq etilgan. Natijada, manyovr lokomotivining rezerv yurishlar soni qisqarishi, vaqt miqdori sezilarli miqdorda kamayishi va yonilg‘i miqdorining tejalishiga olib kelishi ko‘rsatilgan.

Kalit so‘zlar: shoxobcha yo‘li, rezerv yurishlar, vaqtni me‘yorlash, manyovr lokomotivi.

**ЭФФЕКТИВНАЯ ОРГАНИЗАЦИЯ МАНЕВРОВОЙ РАБОТЫ СТАНЦИИ АНДИЖАН-1
В УСЛОВИЯХ СПАДА ОБЪЕМОВ ПЕРЕВОЗОК**

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Аннотация: Эффективная организация работы маневровых локомотивов в условиях спада объемов перевозок является более актуальной задачей. В данной статье изучено влияние закрытия подъездного пути и передачи 12-го пути станции «Андижан-1» под погрузочно-разгрузочные работы на работу маневровых тепловозов. В результате показано, что сокращается количество резервных рейсов маневрового тепловоза, значительно сокращается количество времени и экономится расход топлива.

Ключевые слова: подъездной путь, движения резервом, нормирование времени, маневровый локомотив.

EFFECTIVE ORGANIZATION OF MANEUVER WORKS AT "ANDIJON-1" STATION IN THE CONDITION OF REDUCED TRAFFIC VOLUME

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Annotation: Effective organization of the work of shunting locomotives in the conditions of reduced transportation volume is a more urgent task. In this article, the closure of the branch road at the "Andijan-1" station and the station The influence of the transfer of track 12 to loading and unloading operations on the operation of shunting locomotives has been studied. As a result, it is shown that the number of reserve runs of the shunting locomotive is reduced, the amount of time is significantly reduced, and the amount of fuel is saved.

Key words: access road, reserve traffic, time regulation, shunting locomotive.

KIRISH

Temir yoʻlining boshqa sohalarida ekspluatatsion xarajatlarida yonilgʻi va elektr energiyasining sarfi 15-20% ni tashkil etsa, lokomotiv xoʻjaligida esa 50% tashkil etadi. Temir yoʻl transportida energiyadan foydalanish samaradorligi nafaqat texnik vositalarning konstruksiyasi bilan, balki butun tashish jarayonini tashkil etish, lokomotivlar, vagonlar, yoʻllarga va boshqa texnikalarga xizmat koʻrsatish shartlari bilan ham belgilanadi.



Yoqilg'i-energetika resurslari sarfining sezilarli qismi texnik stansiyalardagi manyovr harakatlariga to'g'ri kelganligi sababli, "O'TY" AJ stansiyalarida manyovr ishlari uchun yoqilg'i-energetika resurslaridan foydalanishni tadqiq va tahlil etish, hamda yoqilg'ini oqilona qo'llash bo'yicha tavsiyalar ishlab chiqish talab etilmoqda.

TADQIQOTNING USULI

Andijon-1 stansiyasida manyovr ishlari hamda stansiya yo'llaridan foydalanish ko'rsatkichlari tahlil qilinganda manyovr lokomotivi manyovr ishlarini bajarayotganda rezerv yurishlari ko'pligi, vagonlarni turish yo'llaridan unumli foydalanilmayotganligi aniqlandi. Bundan tashqari yuklar oqimi kamligi tufayli yuklarni shoxobcha yo'llariga olib kirib berish va olib chiqishda manyovr lokomotivining rezerv yurishlari ko'paymoqda.

Temir yo'l stansiyalarida manyovr ishlarini samarali tashkil etishga doir bir qancha ilmiy ishlar bajarilgan [1-15]. Ammo, ortish-tushirish ishlarini shoxobcha yo'llaridan stansiya yo'llariga ko'chirisha doir ilmiy ishlar yetarli darajada bajarilmagan.

Andijon-1 stansiyaning 12-vagonlar va harakat tarkiblari qo'yiladigan yo'lini ortish va tushirish operatsiyalari uchun ajratilishini taklif qilindi. Bundan ko'zlangan asosiy maqsad manyovr lokomotivini rezerv yurishlarini kamaytirish va shu orqali manyovr ishlari uchun sarflanadigan yonilg'i miqdorini kamaytishdan iborat.

Andijon-1 stansiyasida hozirgi kunda manyovr ishlari 1-jadvaldagi tartibda bajariladi.

1-jadval

ЧМЭЗ-5167 manyovr lokomotivi bilan vagonlarni olib kirib berish va olib chiqishda bajarilgan yarimreyslar hisobi (amaldagi holat bo'yicha)

T/r	Yarimreys chegarasi		Yarimreys davomiyligi, daq.	Vagonlar soni, vagon	Yarimreys uzunligi, m	Yonilg'i sarfi, kg	Yuk operatsiyasi turi	
	dan	gacha					Yuklash	Tushirish
1	M5 dan	6-yo'lga	2.4	rezerv	350	1.8	-	-
2	6-yo'ldan	M5 ga	2.8	5/1	450	1.9	-	-
3	M5 dan	11-yo'lga	4.9	5/1	800	2.3	-	-
4	11-yo'ldan	M5 ga	4.8	0/1	800	2.2	-	-
5	M5 dan	M35 ga	8.9	0/1	1400	3.2	+	-
6	M35 dan	M5 ga	8.8	rezerv	1400	3.1	-	-
7	M5 dan	11-yo'lga	4.8	rezerv	800	2.2	-	-
8	11-yo'ldan	M29 ga	13.9	2/0	2300	4.1	-	+
9	M29 dan	11-yo'lga	13.8	rezerv	2300	4	-	-
10	11-yo'ldan	M20 ga	13.3	3/0	2200	4	-	+
11	M20 dan	M5 ga	18.1	rezerv	3000	4.9	-	-
12	M5 dan	4-yo'lga	1.2	rezerv	200	1.2	-	-
13	4-yo'ldan	M5 ga	1.3	elektrovoz	200	1.3	-	-
14	M5 dan	6-yo'lga	1.5	elektrovoz	300	1.4	-	-
15	6-yo'ldan	M25 ga	4.9	elektrovoz	800	2.3	-	-
16	M25 dan	M20 ga	19.2	rezerv	3200	5.1	-	-



17	M20 dan	11-yo'lga	13.3	0/3	2200	4	-	-
18	11-yo'ldan	M29 ga	13.8	rezerv	2300	4	-	-
19	M29 dan	11-yo'lga	13.9	0/2	2300	4.1	-	-
20	11-yo'ldan	M5 ga	4.8	rezerv	800	2.2	-	-
21	M5 dan	M35 ga	8.8	rezerv	1400	3.1	-	-
22	M35 dan	M5 ga	8.9	1/0	1400	3.2	-	-
23	M5 dan	11-yo'lga	4.9	1/0	800	2.3	-	-
24	11-yo'ldan	M5 ga	4.9	1/5	800	2.3	-	-
25	M5 dan	6-yo'lga	1.4	1/5	250	1.3	-	-
26	6-yo'ldan	M25 ga	4.8	rezerv	800	2.2	-	-
27	M25 dan	M6 ga	13.2	elektrovoz	2200	3	-	-
28	M6 dan	4-yo'lga	1.5	elektrovoz	300	1.4	-	-
29	4-yo'ldan	M6 ga	1.4	rezerv	300	1.3	-	-
Jami			220.2		36350	79.4		

Agar stansiyaning 12-vagonlar va harakat tarkiblari qo'yiladigan yo'li ortish va tushirish operatsiyalari uchun ajratilsa manyovr ishlari 2-jadvaldagi tartibda bajariladi.

2-jadval

ЧМЭЗ-5167 manyovr lokomotivi bilan vagonlarni olib kirib berish va olib chiqishda bajarilgan yarimreyslar hisobi (12-vagonlar va harakat tarkiblari qo'yiladigan yo'li ortish va tushirish operatsiyalari uchun ajratilgandan keyingi holat bo'yicha)

№	Yarimreys chegarasi		Yarimreys davomiyligi, daq.	Vagonlar soni, vagon	Yarimreys uzunligi, m	Yonilg'i sarfi, kg	Yuk operatsiyasi turi	
	dan	gacha					Yuklash	Tushirish
1	M5 dan	6-yo'lga	2.4	rezerv	350	1.8	-	-
2	6-yo'ldan	M5 ga	2.8	5/1	450	1.9	-	-
3	M5 dan	11-yo'lga	4.9	5/1	800	2.3	-	-
4	11-yo'ldan	M31 ga	1.4	0/1	200	1.4	-	-
5	M31 dan	12-yo'lga	1.5	0/1	250	1.6	+	-
6	12-yo'ldan	M31 ga	1.4	rezerv	250	1.5	-	-
7	M31 dan	11-yo'lga	1.3	rezerv	200	1.3	-	-
8	11-yo'ldan	M29 ga	13.9	2/0	2300	4.1	-	+
9	M29 dan	11-yo'lga	13.8	rezerv	2300	4	-	-
10	11-yo'ldan	M20 ga	13.3	3/0	2200	4	-	+
11	M20 dan	M5 ga	18.1	rezerv	3000	4.9	-	-
12	M5 dan	4-yo'lga	1.2	rezerv	200	1.2	-	-
13	4-yo'ldan	M5 ga	1.3	elektrovoz	200	1.3	-	-
14	M5 dan	6-yo'lga	1.5	elektrovoz	300	1.4	-	-



15	6-yo'ldan	M25 ga	4.9	elektrovo z	800	2.3	-	-
16	M25 dan	M20 ga	19.2	rezerv	3200	5.1	-	-
17	M20 dan	11-yo'lga	13.3	0/3	2200	4	-	-
18	11-yo'ldan	M29 ga	13.8	rezerv	2300	4	-	-
19	M29 dan	11-yo'lga	13.9	0/2	2300	4.1	-	-
20	11-yo'ldan	M31 ga	1.3	rezerv	200	1.4	-	-
21	M31 dan	12-yo'lga	1.4	rezerv	250	1.5	-	-
22	12-yo'ldan	M31 ga	1.5	1/0	250	1.6	-	-
23	M31 dan	11-yo'lga	1.3	1/0	200	1.4	-	-
24	11-yo'ldan	M5 ga	4.9	1/5	800	2.3	-	-
25	M5 dan	6-yo'lga	1.4	1/5	250	1.3	-	-
26	6-yo'ldan	M25 ga	4.8	rezerv	800	2.2	-	-
27	M25 dan	M6 ga	13.2	elektrovo z	2200	3	-	-
28	M6 dan	4-yo'lga	1.5	elektrovo z	300	1.4	-	-
29	4-yo'ldan	M6 ga	1.4	rezerv	300	1.3	-	-
Σ					176/6		29350	69.6

1 va 2-jadvallardan ko'rinib turibdiki 12-vagonlar va harakat tarkiblari qo'yiladigan yo'li ortish va tushirish operatsiyalari uchun ajratish orqali manyovr lokomotivini rezerv yurishlarini sezilarli darajada kamayadi, stansiyada manyovr ishlari uchun sarflanayotgan vaqt miqdori birmuncha qisqaradi va asosiysi manyovr ishlari uchun sarflanayotgan dizel yonil'gisi sezilarli miqdorda tejraladi.

NATIJALAR VA ULARNING MUHOKAMASI

3-jadvalda "Andijon-1" stansiyasida 12-vagonlar va harakat tarkiblari qo'yiladigan yo'li ortish va tushirish operatsiyalari uchun ajratilishi natijasida yoqilg'i sarfini tejash orqali olingan iqtisodiy foyda miqdorlari keltirilgan.

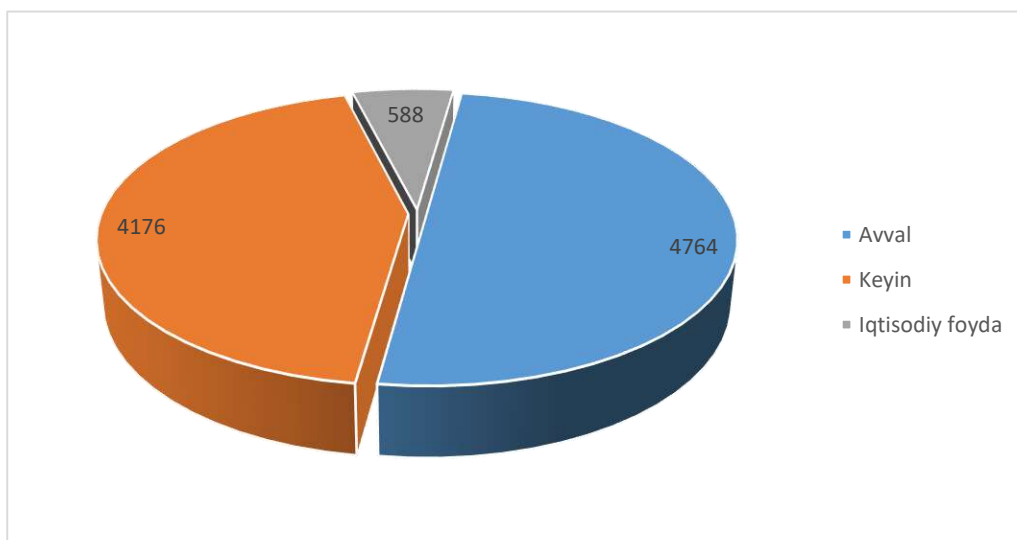
3-jadval

Yoqilg'i sarfini tejash orqali olingan iqtisodiy foyda miqdorlari

№	Ko'rsatkichlar	ЧМЭЗ manyovr lokomotivi (avval)	ЧМЭЗ manyovr lokomotivi (keyin)	Iqtisodiy foйда
1	Smenaga nisbatan yoqilg'i sarfi (o'rtacha) kg	79,4	69,6	9,8
2	Oyga nisbatan yoqilg'i sarfi (o'rtacha) kg	4764	4176	588
3	Yilga nisbatan yoqilg'i sarfi (o'rtacha) kg	57962	50808	7154
4	Oylik yoqilg'i narxi (11987190 so'm/tonna), so'm	57106973	50058505	7048467
5	Yillik yoqilg'i narxi (11987190 so'm/tonna), so'm	694801506	609045149	85756357

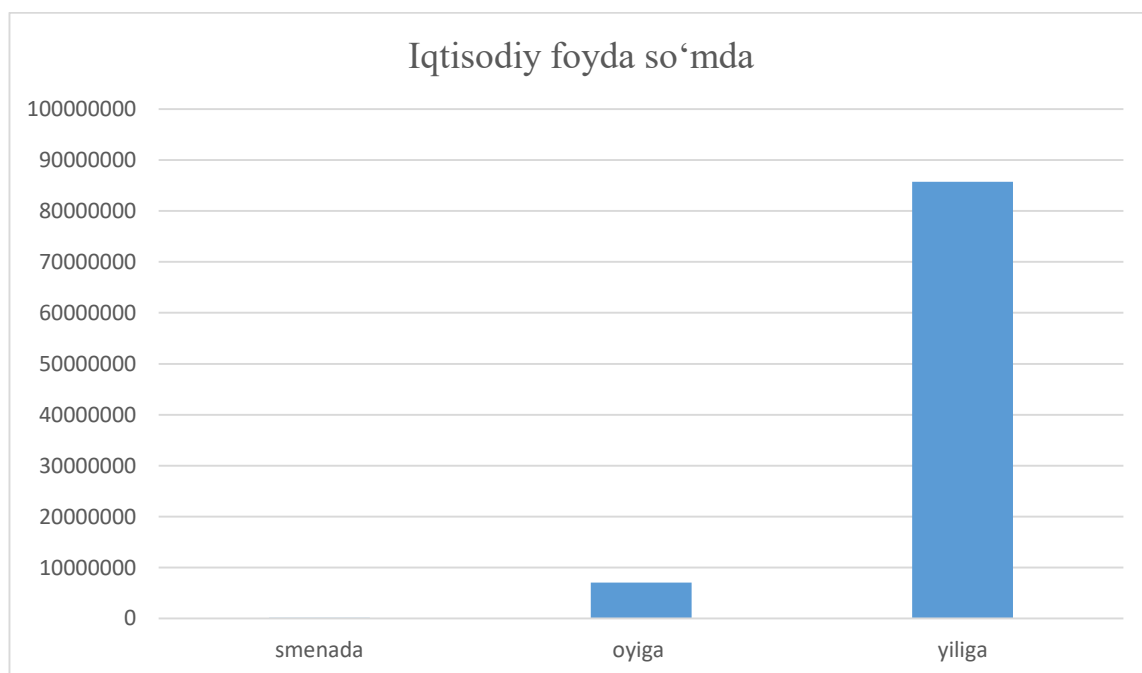


1-rasmda manyovr ishlari samarali tashkil etilish natijasida oyiga 588 kg yoqilg'i tejab qolingani ko'rsatilgan.



1-rasm. Manyovr ishlari uchun yoqilg'i sarfi (oyiga).

2-rasmda manyovr lokomotivini ishini samarali tashkil etish natijasida yonilg'ini tejash orqali naqd pul xarajatlarning tejalishi (o'rtacha) ko'rsatilgan.



2-rasm. Manyovr lokomotivini ishini samarali tashkil etish natijasida yonilg'ini tejash orqali naqd pul xarajatlarning tejalishi (o'rtacha).

XULOSA



Yuqoridagi iqtisodiy ko'rsatkichlardan kelib chiqadiki birgina shoxobcha yo'lini yopish va stansiyadagi unumli foydalanilmayotgan 12-vagonlar va harakat tarkiblari turish yo'lini ortishtirish operatsiyalariga berish orqali manyovr yarim reyslari bajarilayotganda manyovr lokomotivining rezerv yurishlar miqdori qisqardi, manyovr ishlarini bajarish uchun sarflanayotgan vaqt miqdori sezilarli miqdorda kamaydi va eng asosiysi manyovr ishlari uchun sarflanayotgan yonilg'i miqdori tejaldi. "Andijon-1" stansiyasida manyovr ishlarini samarali tashkil etish, stansiyadagi imkoniyatlardan unumli foydalanish orqali manyovr ishlari bajarilayotganda sarflayotgan yonilg'ini tejash orqali yiliga o'rtacha 85756357 so'm iqtisod qilish mumkin.

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**ПОЕЗД ДИСПЕТЧЕРЛАРИ АВТОМАТЛАШТИРИЛГАН ИШ ЖОЙЛАРИНИ
ТАТБИҚ ҚИЛИШНИНГ САМАРАДОРЛИГИ**

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Аннотация: Поезд диспетчерларининг автоматлаштирилган иш жойларини жорий қилиш темир йўл участкасининг фойдаланиш кўрсаткичларига ижобий таъсир кўрсатади. Ушбу мақолада поезд диспетчерининг функцияларни автоматлаштириш натижасида темир йўл участкасида участка тезлигининг камида 3% га ошишига олиб келиши аниқланган ҳамда бунинг ҳисобига бир йилда тежалиши мумкин бўлган маблағ ҳисобланган.

Калит сўзлар: поезд диспетчери, автоматлаштириш, юк станциялари, диспетчерлик участкалари, визуал ҳаракат.

**ЭФФЕКТИВНОСТЬ ВНЕДРЕНИЯ АВТОМАТИЗИРОВАННЫХ РАБОЧИХ МЕСТ
ПОЕЗДНЫХ ДИСПЕТЧЕРОВ**

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Аннотация: Внедрение автоматизированных рабочих мест поездных диспетчеров положительно скажется на эксплуатационных показателях железнодорожного участка. В данной статье было определено, что автоматизация функции поездных диспетчеров приведет к увеличению скорости участка не менее чем на 3% на железнодорожном участке и рассчитана годовая экономия.

Ключевые слова: поездной диспетчер, автоматизация, грузовые станции, диспетчерские участки, визуализация движения.

THE EFFECTIVENESS OF THE IMPLEMENTATION OF AUTOMATED WORKPLACES OF TRAIN DISPATCHERS

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Annotation: Train answering machine motor vehicles and remedies that have an impact on civilian personnel. Ushbu article train dispatching autofill functions as a result of the fact that Timir yild of the tezlignining section decreased by 3% ha oshishiga is excellent for the dead-end settlement part of bir yilda thejalda can be considered a means of bulgan.

Key words: train dispatcher, automation, cargo stations, dispatch plots, visual movement.

Поезд диспетчери участка бўйлаб поездлар ҳаракатланишининг якка раҳбари ҳисобланади. У поездларнинг жадвалга мувофиқ ҳолда хавфсиз ҳаракатланишини таъминлайди, ҳаракатланишдаги узилишларнинг олдини олади, локомотивлар ва вагонлардан рационал фойдаланишни ташкиллаштиради. Поезд диспетчерининг асосий мажбуриятлари хизмат кўрсатилаётган участкада поездларнинг ҳаракатланишига бевосита раҳбарлик қилишдан иборат.

Поезд диспетчерларининг иш режими – тунги ва кундузги вақтда 12-соатли сменадан иборат. Улар иш жойига смена бошланишидан 15-20 дақиқа олдин, ва одатда, смена тугаганидан кейин ҳам шунча вақт қолишлари зарур. Дам олиш ва танаввул қилиш учун деярли танаффуслар берилмайди, бунинг учун улар қисқа паузалардан фойдаланадилар.

Мавжуд илмий ишларнинг аксарияти темир йўл участкаларидаги поездлар ҳаракатини ўзгармас график асосида ташкил этиш ва станциялардаги манёвр ярим



рейсларини қискартиришга қаратилган [1-14]. Аммо, поезд диспетчерларининг автоматлаштирилган иш жойларини жорий қилишнинг темир йўл участкаси иқтисодий кўрсаткичларига таъсири етарлича асосланмаган.

Тадқиқотларга кўра поезд диспетчери ўз ишчи вақтининг катта қисмини сўзлашувга сарфлаши аниқланди, бу эса нафақат унинг иши сифатида, балки асосий касбий мажбуриятларининг бажаришида акс этади, бунинг натижасида нотўғри хатти-ҳаракатлар сони ортади. Шунингдек, поезд диспетчери поездлар қатнови графигининг қишки мавсумида смена давомида ўртача 18-20 та буйруқларни хабардор қилиш билан узатади (~ 600-700 хабар), ёзги мавсумда эса – 25-30 та буйруқни узатади (~ 800 хабар). Шунинг учун ҳозирда поездлар ҳаракатини сифатли бошқариш учун поезд диспетчерининг иш жойларини автоматлаштириш ишлари олиб борилмоқда.

Чет эл темир йўлларида эксплуатацион ишни диспетчерлик бошқариш ўзига хос хусусиятларга эга. Масалан, АҚШда поезд диспетчери 10-30 км дан 500 км гача бўлган масофадаги участка бўйлаб ҳаракатни бошқаради.

Оғир поездларнинг жўнаши олдидан силжишида узилиш ҳолатларининг олдини олиш мақсадида диспетчерлар итаргичлардан (толқач) фойдаланадилар. Ушбу категориядаги поездларга нисбатан диспетчерлик аппаратининг вазифаси поездларнинг максимал даражада тўхтовсиз ўтишини таъминлаш ҳисобланади, боиси оғир поездларнинг тўхташи ва уларнинг юриш олдидан силжиши ёқилғининг кўп сарфланиши, узилиш хавфининг вужудга келиши ва вақт йўқотишлари билан боғлиқ. Бундан келиб чиқиб, диспетчерлар юк поездларига маҳаллий йўловчи поездларига нисбатан кўпроқ афзалликлар яратиб беради, айрим линияларда поездларнинг тўхтовсиз ўтишини таъминлаш мақсадида юк поездлари йўловчи йўлларида ўтказилади.

Францияда диспетчернинг бош вазифаси – кесишувлар, ўзиб кетиш (обгон) ва поездларнинг ушланиб қолишини бошқариш ҳисобланади. У поездлар ҳаракатланишидаги эҳтимолий бузилишларнинг олдини олади, участка ишини тўғрилайди.

Буюк Британияда диспетчернинг вазифаси – поезд локомотивларининг миқдорини минимумга тушириш ва уларнинг унумсиз қатнашини камайтириш саналади.

Бельгия темир йўл участкаларида ҳаракатланишнинг юқори изчиллиги ҳолатида диспетчер иш ҳажмини эплай олмаса, иккинчи диспетчер тайинланади. Бири жуфт йўналишдаги поездларни бошқарса, иккинчи тоқ йўналишдаги поездларни бошқаради [15].

Швеция ва Норвегия йўлларида диспетчер учта хизматнинг иши – тортиш, йўл ва эксплуатацияни бирлаштириб, поездлар ҳаракатини умумий бошқаради.

Буюк Британия, Канада ва АҚШ йўлларида поездлар ҳаракатланишининг диспетчерлик аппарати ҳаракатланиш жадвали бўйича ишни бошқаради; Франция, Япония, Германия, Италия, Нидерландияда эса ҳисоб графиклари асосида ишни бошқаради. Япония ва Ғарбий Европа йўлларининг ҳаракатланиш графиги учун поездлар ҳаракатланиши вақти оралиғидаги захира вақтларни ҳисобга олиш хосдир (3 дан 8 %гача).

Германиянинг темир йўллари тармоқнинг катта зичлиги ва ўтказувчанлик имкониятларининг захираларига қарамай, қишки мавсумда ички сув йўлларидаги ишларнинг тўхтатилиши боис анча қийинчиликларни бошдан кечиради. Бундай ҳолатларда диспетчерлик бошқаруви поездлар оқимини қайта ишлашга улғурмаса, поездларнинг маълум қисмини йирик саралаш ва юк станцияларига кириб келиши олдидан ушлаб (тўхтатиб) туриш бўйича чораларни кўллайди. Саралаш станцияларининг ишини енгиллаштириш мақсадида диспетчерлик жамоаси поездларнинг гуруҳли сонини камайтириб, уларни бир гуруҳдан ташкил топган поездлар билан алмаштиради [16].



Автоматлаштирилган бошқариш тизимларини ишлаб чиқиш ва улардан фойдаланишга доир маҳаллий ва хорижий тажрибаси уларнинг эргономик жиҳатдан таъминлашнинг зарурлиги ва муҳимлигидан далолат беради – инсон-оператор ишлашининг меҳнат самарадорлиги ва юқори сифат билан ишлаш шароитларини ишлаб чиқишга доир талабларни бажариш. Эргономик таъминот иқтисодий самарадорлигини уни ишлаб чиқишнинг мақсадга мувофиқлигини асослаш; унинг тизим умумий иқтисодий самарадорлигига кўрсатадиган таъсирини баҳолаш; тизимнинг рақобатчи вариантларини иқтисодий кўрсаткичлар бўйича қиёслаш; ишлаб чиқувчилар жамоалари фаолиятининг баҳоси, уларни моддий рағбатлантирилишини асослаш мақсадида аниқлайдилар.

Тадқиқотлар [15] ёрдамида аниқланишича, диспетчерлик участкаларида поездлар ҳаракатини жорий режалаштириш ва мувофиқлаштиришни такомиллаштириш участка бўйлаб тезликни тигиз участкалар бўйлаб 2,5...3,5% дан 8% га қадар оширилишини таъминлаши мумкин.

Диспетчерлик участкасида амалдаги ишлаб турган диспетчерлик марказлаштирилиши асосида поезд диспетчери ишини автоматлаштиришдан эксплуатация сарф-харажатлари тежалишини ҳисоб-китоб қилиш учун фақат баҳоси ҳеч қандай шубҳа пайдо қилмайдиган таркибий бўлақлардан фойдаланамиз.

– участка бўйлаб тезликни ошириш, бу вагонлар айланмаси тезлишишига ва локомотивлардан унумлироқ фойдаланишга олиб келади ($\Theta_{ск}$);

– поездларнинг сигналлар қаршисида туриб қолишини (тўхташларини) камайтириш ($\Theta_{эл}$);

– поезд диспетчерлари меҳнат унумдорлигини ошириш ($\Theta_{ш}$).

$$\Theta = \Theta_{ск} + \Theta_{эл} + \Theta_{ш}$$

Юк вагонларининг умумий иш парки айланмасининг юк поездларини ўтказишни мувофиқлаштириш ҳисобига 3% га тезлашишидан тежаладиган маблағ. Ишлаб турган диспетчерлик марказлаштириш тизими асосида функциялар ва ахборот таъминотини автоматлаштириш самарадорлигини ҳисоб-китоб қилиш учун бошланғич маълумотлар.

Участкани тавсифлаб келадиган кўрсаткичлар:

– диспетчерлик участкаси узунлиги – 132 км;

– бир суткадаги юк ҳаракатининг ўртача ўлчамлари – 35 ;

– юк поездлари ҳаракатининг участка бўйлаб тезлиги – 33,6 км/споезд;

– юк поездининг поезд-соати – 176124 сўм (электр. тортув);

Агар автоматлаштирилган иш жойларини татбиқ этиш поездларнинг участка бўйлаб ҳаракатланиш тезлигини, ана шу участка тезлигини камида 3% га ошишини таъминлайди деб олинса, унда участка бўйлаб ўтиш тезлиги 33,6 км/с га тенг бўлиб, ҳар бир юк поездининг участкада бўлиш вақти, ўртача қуйидаги катталиққа қисқаради, бу ҳолда бир поезд-соатнинг сарф-харажатлар ставкаси катталиги 176124 сўм (эл. тортув) га тенг бўлганида, [15] га биноан $\Theta_{ск}$ қиймати қуйидагига тенг бўлади:

$$\Theta_{ск} = \left(\frac{132 \times 35}{33,6} - \frac{132 \times 35}{(1 + 0,03) \times 33,6} \right) \times 176124 \times 365 = 257141000 \text{ сўм}$$

Функцияларни автоматлаштиришдан тежалган маблағ бир диспетчерлик участкасида фақат поездлар ҳаракатланиш участка тезлигининг 3% га ошиши ҳисобига бир йилда 257141000 сўмни ташкил қилади.

Капитал харажатларга автоматлаштирилган иш жойларини харид қилиш, ўрнатиш ва монтаж қилиш харажатлари (K) ҳам киритилади. Бундан ташқари, капитал харажатлар



таркибида кўпайтирилаётган дастурий таъминотни объект учун мослаштириш, АИЖни яратиш бўйича илмий-тадқиқотчилик ва лойиҳа ишлари ($K_{\text{пр}}$), қурилиш, монтаж ва созлаштиришга тушириш ишларига инвестициялар ($K_{\text{стр}}$), дастурий таъминот ($K_{\text{прог}}$), автоматлаштирилган иш жойларини амалдаги диспетчерлик марказлаштириш тизимлари билан уйғунлаштириш харажатлари ($K_{\text{об}}$) ҳам киритилади.

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DEFINITION OF CONCEPTUAL METAPHOR AND ITS TYPES

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Annotation: The article deals with the definition of conceptual metaphor. It also reveals the types of conceptual metaphor and examples for each type.

Key words: rhetorical devices, resemblance metaphors, structure metaphor, orientational metaphor, ontological metaphor.

ОПРЕДЕЛЕНИЕ КОНЦЕПТУАЛЬНОЙ МЕТАФОРЫ И ЕЕ ТИПОВ

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Аннотация: В статье рассматривается определение концептуальной метафоры. В нем также раскрываются типы концептуальных метафор и примеры для каждого типа.

Ключевые слова: риторические приемы, метафоры сходства, структурная метафора, ориентационная метафора, онтологическая метафора.

What is conceptual metaphor? How it began to develop? What are the types of conceptual metaphor?

Before answering these questions, we are going to investigate the definition of metaphor itself. The notion "metaphor" was first established in ancient Greece, and was focused on practical instruction in how to persuade listeners of a particular point of view by the use of rhetorical devices. Due to its central importance, metaphor came to be known as the master trope. Within this approach, metaphor was characterized by the schematic form: A is B. Most sayings, daily expressions were built based on metaphor. For example, in saying "love is a battlefield," the meaning is love is difficult and dangerous like being on a battlefield in war.



As a consequence, metaphor has been identified since the time of Aristotle with implicit comparison. In other words, while metaphor is based on the comparison of two categories, the comparison is not explicitly marked. This contrasts with simile, where the comparison is overtly signalled by the use of as or like: love is as difficult as battlefield, love is difficult, like a battlefield in war. Clearly, examples of metaphor like In saying love is a battlefield are based on comparison.

However, sometimes metaphor can be created based on resemblance between two comparing things. Metaphors of this kind are called resemblance metaphors (Grady 1999) Resemblance metaphors based on physical resemblance have been called image metaphors. For example, "the leaves waved in the wind", "the ocean heaved a sigh". Both instances are not mentally true in reality, but the movement of leaves and ocean have an analogy to refer to these motions.

Metaphor is regarded as a cognitive mechanism, a way of thinking and one of the fundamental processes of human cognition, a specific way of conceptualizing information based on the mental process of analogy and knowledge transfer from one conceptual field into another.

Conceptual Metaphor Theory was first proposed by G. Lacoff and M. Johnson in their revolutionary work "Metaphors We Live By" (1980) and since then has been learned and investigated in a number of subsequent researches (Turner, 1991; Kövecses, 2000; Gibbs, 1994; Reddy, 1979). The basic principle of Conceptual Metaphor Theory is that metaphor is not simply a stylistic device: it is a way of thinking, a tool of cognition. According to some scholars the thought itself is fundamentally metaphorical in nature. Metaphor operates at the level of thinking as "our conceptual system is largely metaphorical, and our ordinary conceptual systems, in terms of which we both think and act, is fundamentally metaphorical in nature" (Lacoff, Johnson, 1980, p.3).

As most researchers studied the notion "conceptual metaphor", there is not exact number of types of metaphor. However, according to G. Lacoff and M. Johnson, there are four types distinguished in the Conceptual Metaphor typology.

First type of metaphor is structure metaphor which is created with the reference of the metaphorical and structural organization of one concept (often an abstract one) in terms of another (often a more concrete one). In this case, the source domains provide frameworks for the target domains (Time is Money; Life is Journey)

In order to illustrate how the event structure metaphor applies, consider the specific metaphor LIFE IS A JOURNEY.

This is illustrated by the following examples

STATES ARE LOCATIONS

He's at a crossroads in his life.

CHANGE IS MOTION

He went from his forties to his fifties without a hint of a mid-life crisis.

CAUSES ARE FORCES

He got a head start in life.

PURPOSES ARE DESTINATIONS

I can't ever seem to get to where I want to be in life.

MEANS ARE PATHS

He followed an unconventional course during his life.

Another example for structure metaphor: TIME IS MONEY

You are WASTING MY TIME



This gadget will SAVE YOU HOURS
I DON'T HAVE THE TIME TO GIVE you
How do you SPEND YOUR TIME these days?
I've INVESTED A LOT OF TIME IN her
I don't have ENOUGH TIME TO SPARE for that
You're RUNNING OUT OF TIME
You need to BUDGET YOUR TIME

Second type of metaphor is orientational metaphor. An orientational metaphor is a metaphor (or figurative comparison) that involves spatial relationships (such as up-down, left-right, in-out, on-off, and front-back). Orientational metaphor (a figure that "organizes a whole system of concepts with respect to one another") is one of the three overlapping categories of conceptual metaphors identified by George Lakoff and Mark Johnson in "Metaphors We Live By" (1980). All the following concepts are characterized by an 'upward' orientation, while their 'opposites' receive a 'downward' orientation.

More is up; less is down: Speak up, please. Keep your voice down, please.
Healthy is up; sick is down: Lazarus rose from the dead. He fell ill.
Conscious is up; unconscious is down: Wake up. He sank into a coma.
Control is up; lack of control is down: I'm on top of the situation. He is under my control.
Happy is up; sad is down: I'm feeling up today. He's really low these days.

Third type of conceptual metaphor is an ontological metaphor?

"In general, ontological metaphors enable us to see more sharply delineated structure where there is very little or none ... We can perceive of personification as a form of ontological metaphor. In personification, human qualities are given to nonhuman entities. Personification is very common in literature, but it also abounds in everyday discourse, as the examples below show:

His theory explained to me the behavior of chickens raised in factories.
Life has cheated me.
Inflation is eating up our profits.
Cancer finally caught up with him.
The computer went dead on me.

Theory, life, inflation, cancer, computer are not humans, but they are given qualities of human beings, such as explaining, cheating, eating, catching up, and dying. Personification makes use of one of the best source domains we have--ourselves. In personifying nonhumans as humans, we can begin to understand them a little better."

(Zoltán Kövecses, *Metaphor: A Practical Introduction*. Oxford University Press, 2002)

Lakoff and Johnson on the Various Purposes of Ontological Metaphors

"Ontological metaphors serve various purposes, and the various kinds of metaphors there are reflect the kinds of purposes served. Take the experience of rising prices, which can be metaphorically viewed as an entity via the noun inflation. This gives us a way of referring to the experience:

INFLATION IS AN ENTITY



Inflation is lowering our standard of living.
If there's much more inflation, we'll never survive.
We need to combat inflation.
Inflation is backing us into a corner.
Inflation is taking its toll at the checkout counter and the gas pump.
Buying land is the best way of dealing with inflation.
Inflation makes me sick.

In conclusion, cognitive Linguistics has developed a new approach to the problem of metaphor and has introduced the notion of conceptual (cognitive) metaphor, regarded as a cognitive mechanism, one of the fundamental processes of human cognition, a specific way of conceptualizing information based on the mental process of analogy and knowledge transfer from one conceptual field into another;

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STYLISTICS AS A BRANCH OF LINGUISTICS

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Annotation: The article is devoted to philological discipline called stylistics and its branches. By addressing to scholars' findings who investigated this topic formerly, we pointed out clear conclusions about the topic.

Key words: linguo-stylistics, stylistic devices, functional styles, stylistic devices (SD) and expressive means (EM).

СТИЛИСТИКА КАК РАЗДЕЛ ЛИНГВИСТИКИ

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Аннотация: Статья посвящена филологической дисциплине под названием стилистика и ее разделам. Обратившись к выводам ученых, которые ранее исследовали эту тему, мы указали на четкие выводы по этой теме.

Ключевые слова: лингвостилистика, стилистические приемы, функциональные стили, стилистические приемы (SD) и выразительные средства (EM).

Stylistics is a section of linguistics that studies the expressive means and possibilities of the language and the patterns of functioning (use) of the latter in various areas of social activity and communication situations.

Moreover, stylistics studies the system of styles of a particular language, describes the norms and methods of using the literary language in various conditions of linguistic communication, in various types and genres of writing, in various spheres of public life.

The subject of stylistics is not complex and heterogeneous. This can explain the differences in the definition of the subject and tasks of stylistics by different scientists.

The Swiss scientist Charles Bally, one of the founders of stylistics as an independent science, in his book "French Stylistics" defines the subject of this section of linguistics as follows: "Stylistics studies the emotional expression of the elements of a language system, as well as the interaction of speech facts that contribute to the formation of expressive means of a particular language". This point of view is shared by many modern linguists.



The truth about stylistics is that both the first and second approaches are true, that modern stylistics combines the study of emotional and evaluative elements in language and functional varieties of letters. language.

It is definitely true that some linguists believe that within the framework of one science (namely, stylistics), such different tasks are incompatible. In the mentioned book "Fundamentals of speech culture" B.N. Golovin wrote: "Means of speech expressiveness are one thing. The regularities of the functioning of the language, due to the "most appropriate use of language units" depending on this and that, is something else. "Interaction of literary language and various styles of fiction" is the third. How can such diverse things be the subject of study by one science?

So, the development of stylistics singled out functional styles and emotionally expressive means as objects of study. However, they do not exhaust the subject of stylistics.

Summing up what has been said about stylistics, one can use the generalized definition of its subject, which was given by the largest Russian philologist Academician V.V. Vinogradov (1895-1969): "The subject of stylistics is all areas and all ways of using language, especially literary language."

Thus, stylistics as a branch of the science of language studies the ways of using (or functioning) linguistic units and categories within the literary language in accordance with: a) the prevailing typical contexts and speech situations of their use, b) with the stratification of the literary language into functional variants (styles) and also explores the style system.

A small comment is needed here. You probably noticed that sometimes it is said about the use of language units, and sometimes about their functioning. It seems that the words use and functioning are synonyms. This separation of them is explained by the different views of the researcher on verbal communication, on verbal communication. (Speech communication includes written texts and oral speech. This is where the "life" of the language takes place, here it manifests itself in action.) So, when we say "use of language, language units", we consider the problem from the position of the consumer, or rather user (if I may say so), language, i.e. from the point of view of a person who uses the language for some purpose. Functioning, on the other hand, involves looking at the use of language from the point of view of the end result. We proceed from the fact that linguistic units have already been used, are being used, and we study the results of this use, the conditions and purposes of using the language. And apparently, in stylistics it is more logical to talk about the functioning of language units, since it studies the objective processes in speech communication, the trends in the development of the language in the process, in the course of its use by society. And it is more expedient to talk about the use of language units in the doctrine of the culture of speech as a scientific discipline that has a pedagogical orientation, aims to observe, preserve, cultivate the purity, wealth, beauty of the national language and educate the population (and especially young people) of a high speech culture.

Returning to the subject of stylistics, it must be said that due to its multi-layered, well-known heterogeneity, four main sections are clearly distinguished in this scientific discipline itself: the stylistics of language units, functional stylistics, the stylistics of artistic speech and the stylistics of the text.

There are 2 basic objects of stylistics: - stylistic devices and figures of speech (functional styles).

Branches of stylistics are following:



-
- Lexical stylistics – studies functions of direct and figurative meanings, also the way contextual meaning of a word is realized in the text. L.S. deals with various types of connotations – expressive, evaluative, emotive; neologisms, dialectal words and their behavior in the text.
 - Grammatical stylistics – is subdivided into morphological and syntactical. Morphological s. views stylistic potential of grammatical categories of different parts of speech. Potential of the number, pronouns... Syntactical s. studies syntactic, expressive means, word order and word combinations, different types of sentences and types of syntactic connections. Also deals with origin of the text, its division on the paragraphs, dialogs, direct and indirect speech, the connection of the sentences, types of sentences.
 - Phono stylistics – phonetical organization of prose and poetic texts. Here are included rhythm, rhythmical structure, rhyme, alliteration, assonance and correlation of the sound form and meaning. Also studies deviation in normative pronunciation.
 - Functional stylistics (stylistics of decoding) – deals with all subdivisions of the language and its possible use (newspaper, colloquial style). Its object - correlation of the message and communicative situation.
 - Individual style study – studies the style of the author. It looks for correlations between the creative concepts of the author and the language of his work.
 - Stylistics of encoding - The shape of the information (message) is coded and the addressee plays the part of decoder of the information which is contained in message. The problems which are connected with adequate reception of the message without any losses (deformation) are the problems of stylistics of encoding.

Stylistics, sometimes called linguo-stylistics, is a branch of general linguistics. It deals mainly with two interdependent tasks: a) the investigation of the inventory of special language media which by their ontological features secure the desirable effect of the utterance and b) certain types of texts (discourse) which due to the choice and arrangement of language means are distinguished by the pragmatic aspect of the communication.

The two objectives of stylistics are clearly discernible as two separate fields of investigation. The inventory of special language media can be analysed and their ontological features revealed if presented in a system in which the co-relation between the media becomes evident.

The types of texts can be analysed if their linguistic components are presented in their interaction, thus revealing the unbreakable unity and transparency of constructions of a given type. The types of texts that are distinguished by the pragmatic aspect of the communication are called functional styles of language (FS); the special media of language, which secure the desirable effect of the utterance, are called stylistic devices (SD) and expressive means (EM).

SDs and EMs necessarily touches upon such general language problems as the aesthetic function of language, synonymous ways of rendering one and the same idea, emotional colouring in language, the interrelations between language and thought, the individual manner of the author in making use of language and a number of other issues.

Functional styles cannot avoid discussion of such most general linguistic issues as oral and written varieties of language, the notion of the literary (standard) language, the constituents of texts larger than the sentence, the generative aspect of literary texts, and some others.



The branching of stylistics in language science was indirectly the result of a long-established tendency of grammarians to confine their investigations to sentences, clauses and word-combinations which are «well-formed», to use a dubious term, neglecting anything that did not fall under the recognized and received standards. This tendency became particularly strong in what is called descriptive linguistics. The generative grammars, which appeared as a reaction against descriptive linguistics, have confirmed that the task of any grammar is to limit the scope of investigation of language data to sentences which are considered well-formed. Everything that fails to meet this requirement should be excluded from linguistics.

But language studies cannot avoid subjecting to observation any language data wherever, so where grammar refuses to tread stylistics steps in. Stylistics has acquired its own status with its own inventory of tools (SDs and EMs), with its own object of investigation and with its own methods of research.

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DIIZOTSIANATLARNING REAKSION QOBILIYATLARI

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Annotatsiya: Bugungi kunda karbamatlarning ko'p hosilalari, ular asosida yangi yuqori samarali past toksik biologik faol birikmalarni izlash doimiy ravishda davom etmoqda, Shuning uchun organik kimyoning ushbu sohasini rivojlantirish eng dolzarb vazifa bo'lib, sintez, texnologiya va ilmiy asoslangan yondashuvlarning yangi ishlanmalarini talab qiladi.

Kalit so'zlar: Bis-uretan, piretroid, diizosianat, fozalon, piretrin, diatsetilen, monoatsetilen.

РЕАКЦИОННАЯ СПОСОБНОСТЬ ДИЗОЦИАНАТОВ

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Аннотация: На сегодняшний день существует множество производных карбаматов и постоянно ведется поиск новых высокоэффективных, малотоксичных биологически активных соединений на их основе, поэтому развитие этой области органической химии является наиболее актуальной задачей и требует новых разработок синтез, технология и научно обоснованные подходы.

Ключевые слова: бисуретан, пиретроид, диизоцианат, фазолон, пиретрин, диацетилен, моноацетилен.

REACTIVITY OF DIISOCYANATES

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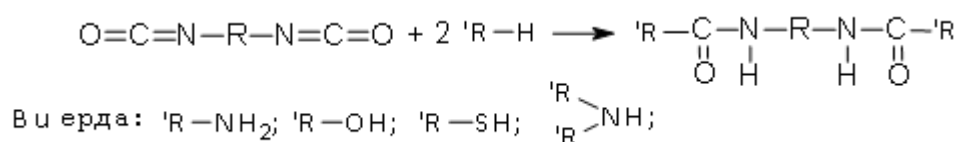
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Annotation Today, there are many derivatives of carbamates, and the search for new highly effective, low-toxic biologically active compounds based on them is constantly ongoing. Therefore, the development of this field of organic chemistry is the most urgent task and requires new developments of synthesis, technology and scientifically based approaches.

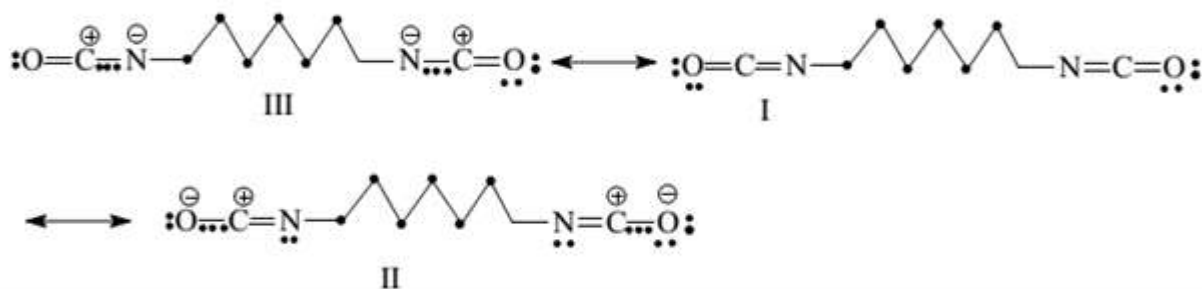
Key words: Bis-uretan, piretroid, diizosianat, fozalon, piretrin, diatsetilen, monoatsetilen.

Diizosianatlar uchun tarkibida faol vodorod atomlarini tutgan quyidagi reaksiya bo'yicha boradigan birikish reaksiyalari xos:

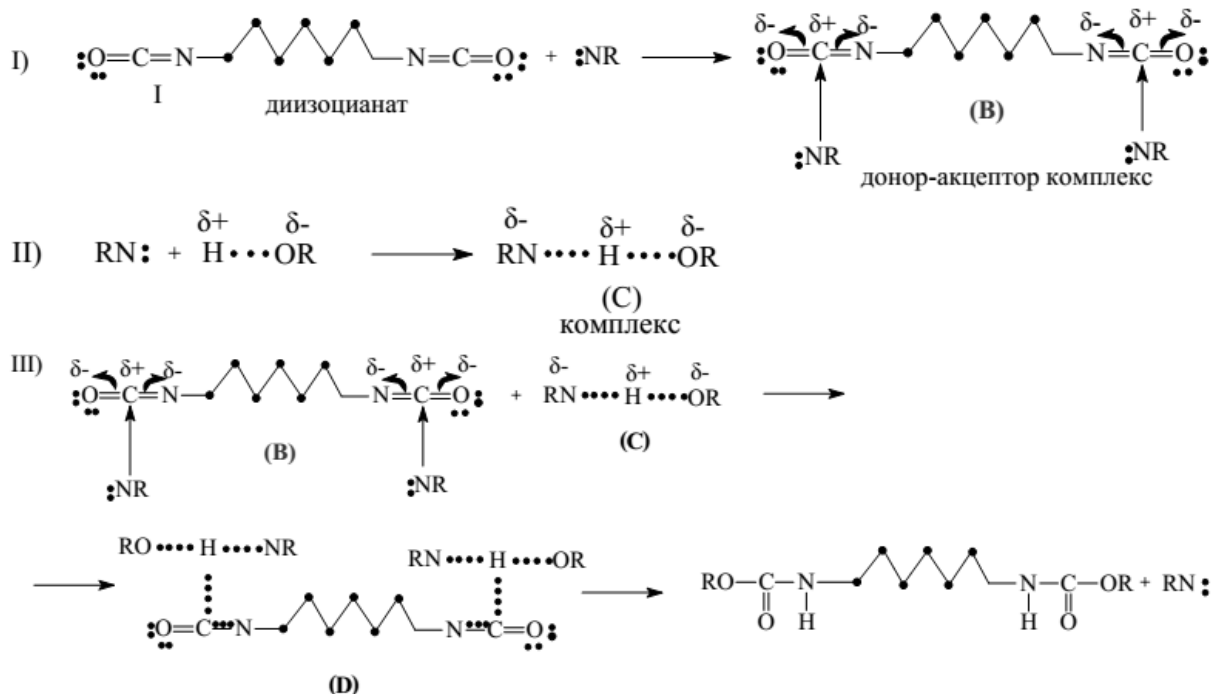


Izosianatlarning kimyoviy holati, quyidagi valent tuzilishlar (I-III) da bayon etilgan, -NCO guruhlaridagi elektron uchliklarni taqsimlanishi bilan to'liq mos keladi.

-N=C=O guruhidagi azot va kislorod asosan manfiy zaryadli bo'lib, elektrodonor xossaga ega bo'ladi. Shuning uchun bu guruh ham nukleofil ham elektrofil zarrachalar bilan ta'sirlashadi. Ko'pchilik holatlarda, diizosianatlar elektrofil agent rolini bajarishi mumkin. Ular uchun eng xos reaksiya kislorod va azot tutgan moddalar ishtirokidagi AN reaksiyalardir.



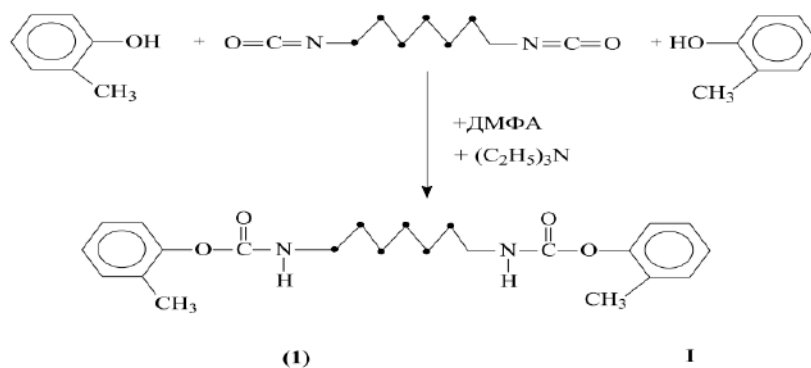
-N=C=O guruhidagi azot va kislorod asosan manfiy zaryadlangan va elektron berish xususiyatiga ega, shuning uchun bu guruh ham nukleofil, ham elektrofil hujumga uchraydi. Ba'zi hollarda diizosianatlar ham elektrofil moddalar rolini o'ynaydi. Ulardan kislorod va azot tutgan moddalar ishtirokidagi nukleofil birikish reaksiyalari ko'proq xos hisoblanadi. OH- guruhi, masalan, taqsimlanmagan elektron juftga ega o-krezol, GMDI molekulasidagi elektrofil markazga hujum qilib qayta gruppalanib bis-uretanga aylanadigan oraliq mahsulot (B) hosil qiladi. Shuning uchun OH guruh tutgan aromatik birikmalarning geksan-1,6-diizosianat bilan o'zaro ta'sirlashish mexanizmi quyidagi sxema bilan ifodalansa to'g'riroq bo'ladi degan xulosaga kelingan:



bu yerda RN: -erituvchi; ROH – gidroksil guruh tutuvchi aromatic birikma.

Gidroksil guruh tutuvchi aromatic birimlarning GMDI birikish reaksiyalarning mexanizmi to'g'risidagi savolga xulosaviy javob berish uchun reaksiya kinetikasini qo'shimcha ravishda o'rganib chiqilish talab etiladi.

Orto-krezolning diizosianat bilan ta'sirlashihsidan preparat hosilalari (I) quyidagi sxema bo'yicha hosil bo'ladi:



Shunday qilib, N,N'-geksametilen-bis[(orto-krezololilo)-karbamat] (1) hosil bo'lish reaksiyasi uchun optimal sharoitlar quyidagicha bo'ladi: harorat 27-40°C; erituvchi-DMFA, reaksiya davomiyligi 3-3,5 soat.

Bis-uretanlar hosilalarini sintezi uchun kerak bo'ladigan optimal sharoitlarni yaratish uchun reaksiyaning davomiyligi, harorat, erituvchining tabiati mahsulot unumiga qanday ta'sir qilishi o'rganib chiqilgan.

Erituvchi tabiatining ta'sirini o'rganish uchun dimetilformamididan tashqari reaksiyaga kirishuvchi komponentlarning ionlanishiga yordam beruvchi, bu bilan reaksiya sezilarli darajada kuchaytiruvchi bir qator elektron donor erituvchilar (TGF, piridin, dioksan, asetonitril) qo'llab ko'rilgan. Shunday qilib, dipol momentlarining oshishi bilan aproton bipolyar erituvchilar, mahsulot unumini quyidagi tartibda o'zgartadi: DMFA (3.8) > Py (2.19) > TGF (1,7) > Dioksan

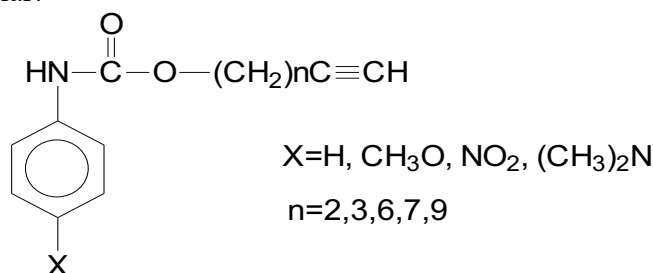


(0). "O'xshash, o'xshashda" erish prinsipiga asosan, DMFA ning geterosikllar bilan o'zaro ta'siri ayniqsa regioselektiv tarzda davom etadi, bu esa, aromatik gidroksillarning $-N=C=O$ va $H-O<$ guruhlari orasida kuchli barqaror turg'un komplekslar hosil bo'lishi ehtimolini kuchaytiradi. Shunday qilib, katta dipol momentlaga ega va yuqori dielektrik o'tkazuvchanlikli bipolyar aproton erituvchilar kuchli donor-akseptor komplekslarini shakllantirishga qodir, bu esa mahsulot unumining oshishiga yordam beradi.

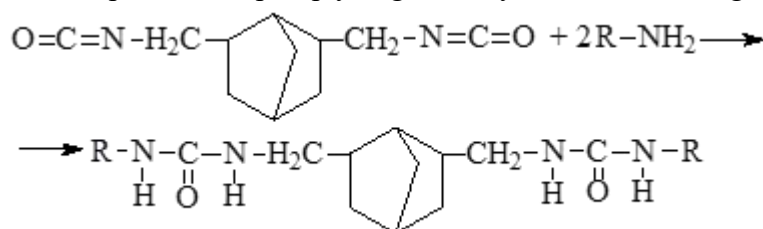
Nemis olimlarining patentida[18] esa fenil-(benzil) izosianatni propin –1,3 bilan o'zaro reaksiyasidan fenil -(benzil) propargil karbamatni yuqori unum bilan chiqishi keltirilgan. Shuningdek, antimikrobl vosita sifatida qo'llaniladigan gipoyodid natriydan 3-yod-2- propinil karbamat olinishi ham keltirilgan.

To'qimachilik, ko'ncilik, teri, mo'ynachilik hamda yuvuvchi va tozalovchi vositalar, tajribani qayta ishlash uchun mikrobg qarshi va fungitsid vositalari tarkibidagi faol ingredient sifatidagi preparatlarni mualliflar joriy etdilar.

Rossiyalik olimlar tomonidan[19] mono- hamda diatsetilen qatoridagi karbamatlarni sintez qildilar va xarakterladilar:

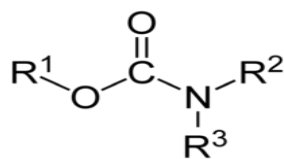


Amerikalik olimlar tomonidan polisiklik diizotsianatlarni spirtlar, aminlar, mochevinalar bilan 5-10 soat davomida qizdirish orqali quyidagi reaksiya mahsuloti olingan:[20]



Uretanlar, bis-mochevinalar va boshqa olingan hosilalar yuqori suyuqlanish haroratiga ega bo'lib, yuqori unum bilan chiqadigan moddalar hisoblanadi.

Uretanlar (karbamatlar) $\text{R}'\text{R}''\text{NCOOR}$ umumiy formulasining birikmalaridir, bu yerda R' va R'' H, Alk, Ar; R -Alk. Uretanlar - noturg'un karbamit kislotaning H_2NCOOH va uning o'rnini bosadigan moddalardir. Etil karbamatlari boshlang'ich ma'noda uretan deb nomlangan, ammo hozir uretan va karbamatlar atamaları sinonim bo'lib qolmoqda.

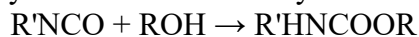


Organik erituvchilarda eriydigan rangsiz kristalli moddalar, quyi uretanlar suvda eriydi. Uretan nukleofillar (aminlar va boshqalar) bilan oson reaksiyaga kirishadi, spirtlarni tozalaydi:

Uretanlr tegshli alkogol, amin (yoki ammiak) va CO_2 ga, karbamid ammonolizga gidroliz qilinadi.



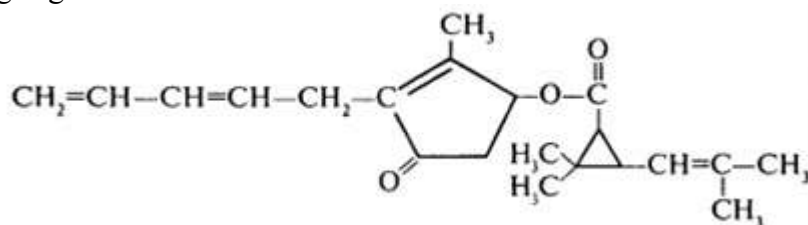
R'HNCOOR umumiy formulasidagi uretanlarni sintez qilishning asosiy usuli izosianatlarning tegishli alkogol yoki fenol bilan reaksiyasi hisoblanadi.



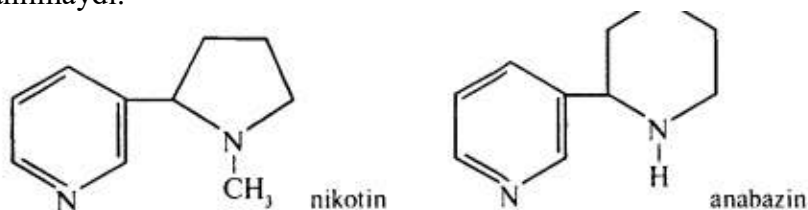
Uretanlarni alkogolning CO(NH₂)₂ bilan karbonat ангидрид kislotasi yoki boshqa usullar bilan o'zaro ta'siri natijasida olinadi va vaziyatda hosil bo'lgan izosianatlardan foydalanish mumkin masalan, Curtius yoki Hoffmann reaksiyalarini alkogolli muhitda olib boriladi.

So'nggi yillarda kontakt insektisidlar orasida siretrin sinfiga mansub bo'lgan preparatlar muhim ahamiyatga ega bo'lmoqda.

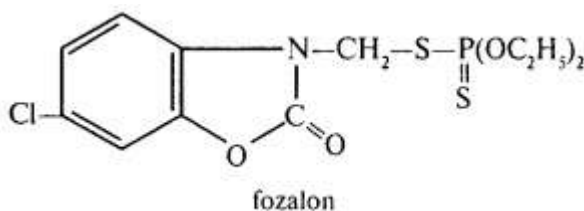
Piretrinlar bu moychechak o'simligidan ajratib olinadigan tabiiy insektisid — piretrumning ta'sir etuvchi qismidir. Piretrinlar orasida zararli hasharotlar uchun eng zaharlisi quyidagi tuzilishga ega:



Bu birikma siklik ketospirt pirarolonning xrizantem kislotasi bilan hosil qilgan murakkab efiridir. Piretroidlar zararkunandalarga ta'sir etadi va atrof- muhitda saqlanib qolish xususiyatiga ega emas. Shuning uchun hozirgi vaqtda sintetik piratroidlar ishlab chiqilmoqda, lekin ular juda qimmat. O'simliklardan ajratib olingan alkaloidlardan nikotin va anabazin aktiv kontakt insektisid hisoblanadi, lekin ular odamlar va hayvonlar uchun zaharli, shu tufayli ular qishloq xo'jaligida qo'llanilmaydi.



Hozirgi vaqtda yangi insektoakaritsid-benzofosfat yoki fozalon O,O-dietil-S-(6-xlorbenzoksazolonil-3-metil) ditifosfat qishloq xo'jaligida keng o'rin oldi. Bu preparat kam zaharli hisoblanadi, zararkunandalarning ichki yo'llarini zaharlaydi. Benzofosfatdan urug'larni dorilashda ham foydalaniladi:



Nashr qilingan patentlar va maqolalarda asosan izotsianatlarni almashingan fenollar, aminlar va spirtlar bilan ta'sirlashuvi bayon etilgan. Reaksiyalarni suvsizlantirilgan benzol, atseton, toluol, dioksan, tetragidrofuranlarda, trietilamin asoslari ishtirokida 3-8 dan 24 soat davomida olib boriladi. Diizotsianatlar va alifatik qator spirtlar bilan bajarilgan ishlar deyarli uchramadi yoki olib borilmagan, biroq poliuretanlar olish maqsadida diizotsianatlar va diollar bilan kamdan-kam ish olib borilgan.



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