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DETECTION OF RAIL DEFECTS FROM THE DEGREE OF ITS DEVELOPMENT

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Abstract: *The article deals with the detection of rail defects in high-speed sections of railroad track.*
Key words: *Rail, trackless track, rail defects, rail diagnostics.*

To determine the number of serial defectoscopic diagnostics in the cycle of defectoscopic diagnostics of rails condition in the track according to [1] it is necessary to know the dependence of the probability of defect detection on the degree of its development, and the smallest interval between the outputs of rails by defects associated with internal damage to the metal, which can be detected by means of defectoscopic diagnostics. The same defect is the cause of more than 50 % of rail fractures not detected at their non-destructive defectoscopic diagnostics. Therefore, the speed of transverse crack development and its limiting dimensions are used as criteria of periodicity of defectoscopic diagnostics.

According to [1], the defect formation is conditionally divided into three stages. At the first stage, internal longitudinal microcracks are formed in the rail head, which under the action of train load develop into a transverse crack. At the second stage, the transverse crack reaches the size at which it can be detected by defectoscopic diagnostics. For modern typical diagnostics this size is 8-10 % of the cross section of the rail head. At the third stage, the transverse crack continues to develop and reaches a critical size at which brittle fracture of the rail can occur. During the third stage the crack should be detected by means of defectoscopic diagnostics before reaching the critical size.

The probability of transverse crack detection also depends on the applied means of defectoscopic diagnostics.

For new means of defectoscopic diagnostics in this case we used curves of probability of defect detection depending on the degree of their development used on Union Pacific railroad (USA), where defectoscopic diagnostics means are close in their characteristics in the range of transverse crack detection at the level of its development 10-35 % of the rail head cross-section.

For the old means of defectoscopic diagnostics the curve is constructed taking into account the 3-fold increase in the accumulated probability of missing a defect in the range of its development 10-35 % compared to the new means, which according to [1] was confirmed by repeated comparative tests.

In [1] it is noted that the main factors influencing the value of the critical crack size are the level of negative temperatures, the magnitude of irregularities on the rolling surface of the rail head, and train speeds.

The deterioration of the condition of wheel rolling surfaces for the same period according to [1] is also evidenced by a 25% decrease in the rails' operating time to failure as a result of internal metal damage. This circumstance was taken into account in [1] when assigning critical dimensions of transverse crack in the rail head, and in [2], [3] it was established that its size should not exceed the dimensions given in Table 1.

Critical dimensions of transverse crack in rail head

Table 1

Indicators	Their values for P65 rails at 270 kN axle load									
	Heat-strengthened/non-heat-strengthened									
Slider depth, mm	-					2				
Travel speed, km/h	80					60				
Temperature	+20	-20	-30	-40	-50	+20	-20	-30	-40	-50
Critical defect area, % of head area	80/60	40/25	33/20	26/16	21/15	29/25	22/13	20/10	18/8	15/5

Based on the data in Table 1, taking into account the maximum axle loads allowed today on the network, for sections with moderate negative temperatures before their onset in [1] were identified all cracks with development of more than 25% for heat-strengthened rails, and for very low temperatures - 20%, and the laying of non-hardened rails in very low temperatures should not be allowed, and at positive temperatures crack development in [1,6,7] is normalized in the range of 30-35%. From the above stated in the summer period the frequency of defectoscopic diagnostics of rails condition in the track is reduced, and in the pre-winter period - increased.

At the end of the twentieth century probabilistic models in planning the work of defectoscopic diagnostics means were used on the U.S. railroads. Thus, the model is based on the Weibull distribution [4,5,8] on the Burlington Northern Santa Fe Class I railroad, which has a length of 40.8 thousand km of main tracks and a freight load of 18.1 million gross tons of freight.

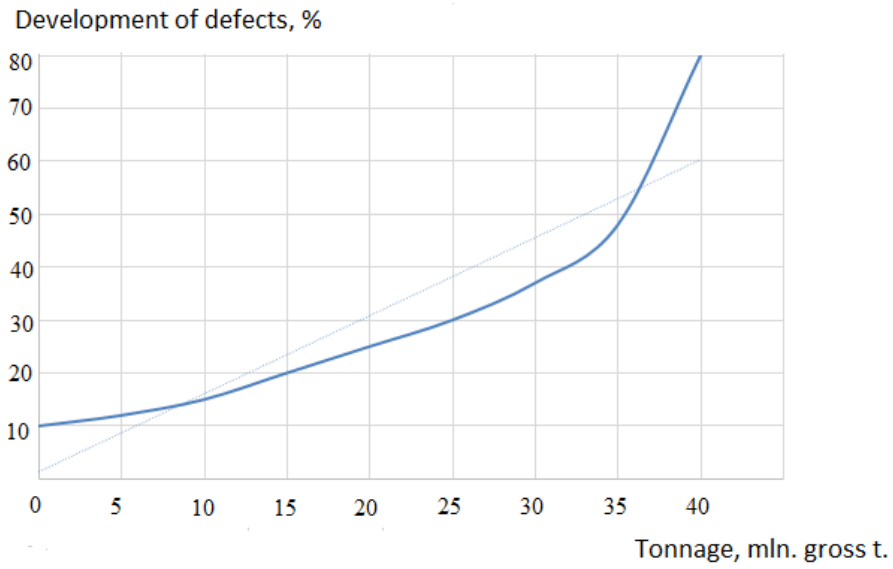

Fig. 1 - Degree of transverse crack development in the rail head after its nucleation depending on the tonnage worked.

The detected incipient defect is registered at the subsequent defectoscopic diagnostics, but already with increased size. This makes it possible to estimate the weighted average probability of defect detection. Using the data on previously detected defects and fractures, the dependence of the frequency of defectoscopic diagnostics on the freight intensity of the section was established, based on the upper limit of the periodicity of defectoscopic diagnostics of 36 million tons. Gross and rail yield by dangerous defects 0,0625 pcs/km (Fig. 2).

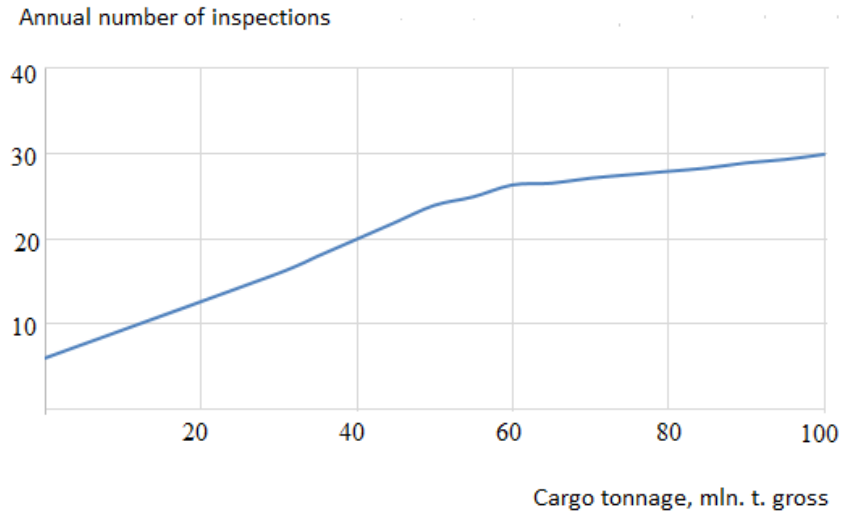

Fig. 2 - Dependence of the frequency of defectoscopic diagnostics of rails on load tension.

Based on the results of the research, a computer program for planning the periodicity of defectoscopic rail diagnostics was developed for Burlington Northern Santa Fe.

Conclusions:

In all applied methods of determining the periodicity of defectoscopic diagnostics of rails in the track as the first and continuous indicator all authors apply the indicators of train traffic safety and safety engineering in different interpretation. In all researches the train traffic safety is characterized by the size of single rail yielding by fractures and defects, etc. This is quite legitimate, as the issues of train traffic safety in track operation are of the highest priority. Therefore, the subsequent calculations of the periodicity of defectoscopic diagnostics of rails in the track should be preceded by technical research calculations, as well as operational justifications characterizing the degree of train traffic safety on the considered structures of the track top structure.

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FRONTAL KOMPOZITSIYA FAKTURASINI AKS ETTIRISH VA RANG DOG`LARINI MUNOSABATLARINI ANIQLASH VA ULARNI O`ZARO BOG`LASH

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Anotatsiya: *Hajmiy kompozitsiyaning afzalliklarini aniqlashda muhim rol o`ynaydigan yana bir jihat mavjud. Bu - hajmni o`rab turgan fazoga kiritish muammosi. Hajm og`irlik, ma`no, g`oyaga ega.*

***Kalit so`zlar:*** *Tekislik, kompozitsiya, frontal, faktura, ob`ekt, ranglar, uyg`unlashuv.*

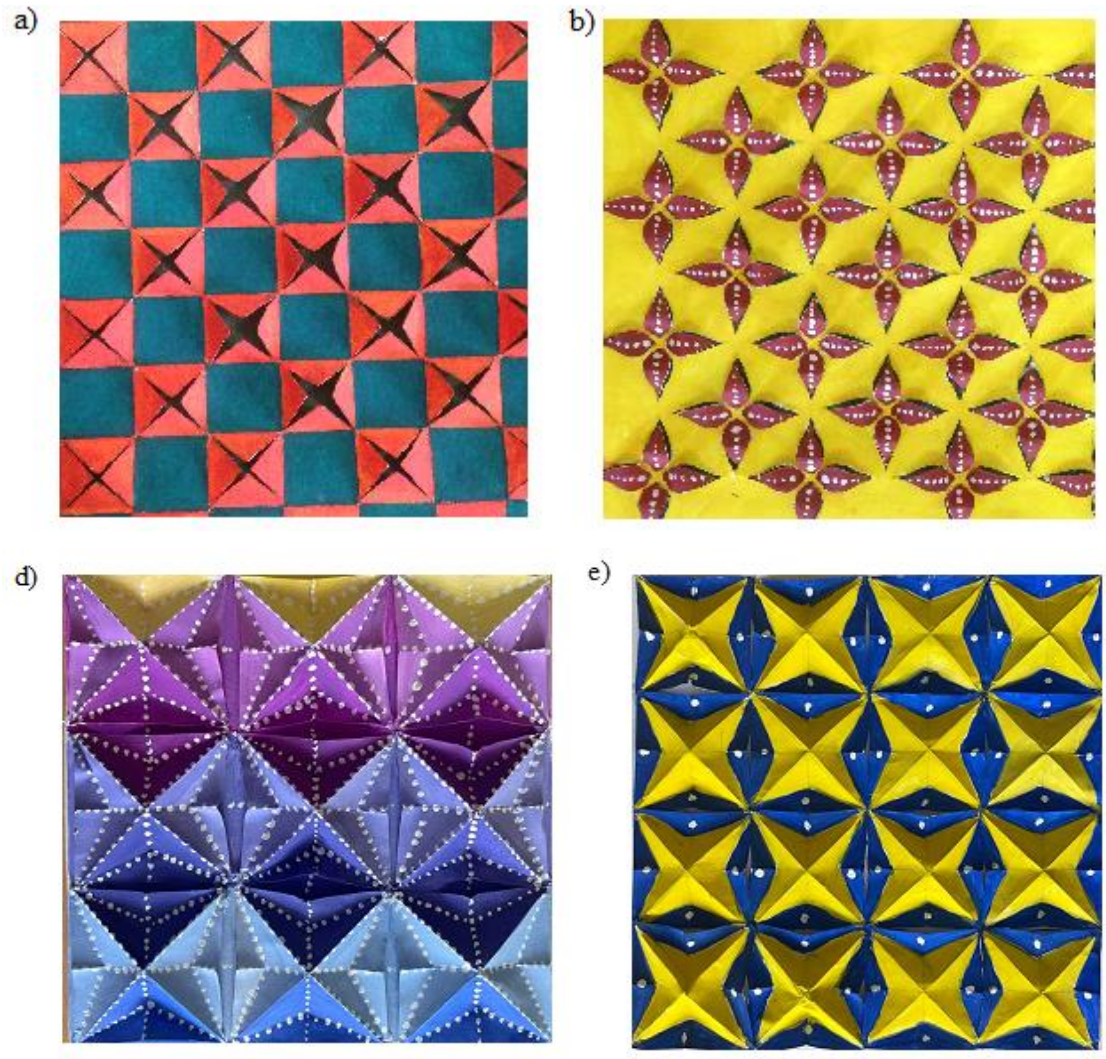
Abstract: *There is another aspect that plays an important role in determining the advantages of volumetric composition. This is the problem of adding volume to the surrounding space. Volume has weight, meaning, idea.*

Key words: *Plane, composition, frontal, texture, object, colors, harmony.*

«Tekislik»dagi kompozitsiyalar turli texnika va materiallarda bajarilgan asar sifatida ifodalangan. An`anaviy texnikada bajarilgan rang-tasvir va grafika asarlarini, fan va texnika rivojining ma`lum bir darajasidagina paydo bo`la olgan asarlarni ko`rsatish mumkin. Ularga kompyuter grafikasi, golografiya va boshqalar kiradi. Frontal kompozitsiya xomashyo fakturasi ko`pincha kompozitsiyaga Rel`eflilik beradigan (to`qimachilik- gobelen, shisha-vitraj va h.k.) amaliy-bezak xarakteridagi asarlarda keng qo`llaniladi.

Tekislikdan chiqib turuvchi», demak Rel`efga ega bo`lgan kompozitsiyalar shuningdek, frontal kompozitsiyaga kiradi. Ular tomoshabinga frontal bo`lib ko`rinadi va yon tarafdan qarashni talab etmaydi. Asarlar Rel`efi yorug`lik va soya hisobiga ularning shakli va kompozitsion qurilishini ifodalash imkonini beradi. Bunday kompozitsiyalarga xomashyo ishi va faktura o`yini xos.Frontal kompozitsiyalar, boshqa kompozitsiyalarga qaraganda ko`proq, ijodkor talaba tomonidan mustahkam asar sifatida yaratiladi. Aynan shu bilan muhit ta`siri inkor qilinadi, mashtab, uslubiyat, ular mavjud bo`ladigan fazoni tashkillashtirish haqida o`ylamaslik imkoni tug`iladi. Asarning mustaqilligi ramka, hoshiya, chiziq, to`siq va boshqa kompozitsion usullar bilan namoyon qilinadi. Ular asarni fazodan ajratish muammosini hal qiladi, kompozitsiyani o`raydi. U faqat o`z ichida rivojlanadi.

Shu bilan bir vaqtda «ramka»dagi frontal kompozitsiya interyer yechimida qanday bo`lsa, eksteryer yechimida ham xuddi shunday chuqur-fazoviy kompozitsiyaning elementi bo`la oladi. O`z shakli, plastikasi, rangi, fakturasi, qurilishi bilan u kompozitsion tuzilishga faqat uzviy kiribgina qolmay, uni rivojlantirishi va hatto kompozitsion markaz bo`lishi mumkin. Negaki uyg`unlashuvning kompozitsion qonun va vositalari kompozitsiyaning har qanday turida mavjud bo`ladi, goho biror marta uni anglab, frontal, hajmiy yoki chuqur-fazoviy kompozitsiya asarlarini yaratishda siz ulardan bemalol foydalanishingiz mumkin.



1- rasm. a), b), d), va e) Frontal kompozitsiya fakturasini aks ettirish yoki namoyon qilish.

Fakturani tayyorlash texnologiyasi.

- PVA yelimi asosida faktura tayyorlanadi, tualet qog`ozi, (patlar, ip, ipak tola) va guash bilan kolerlanadi.
- Vatmanga turli metall predmetlar, porolon va boshqalar bilan chizish jarayonida turli teksturali yuzasi tuziladi.
- Sadaf rangli guash yordamida rel`efning keng mazmuni yoritiladi.
- Yuzaning o`ziga xos ifodalanishini yoritish va kompozitsiyani emotsional qabul qilishni o`rganish.

Faktura – shaklning yuzasini tashqi tuzilishini o`ziga xos xususiyatlari (silliq va boshqalar.). Materialning fakturasi yuzaning mikrokamchiliklarni zichligi va kattaligiga bog`liqdir. Chegeradan biri silliq yuzadan iborat bo`ladi, bu esa faktura elementlarini juda kam bo`lib ular ko`rish jihatdan farqlanmaydi. Boshqa chegara bunda faktura elementlarini kattaligi mustaqil shakl elementlari sifatida qabul qilinadi va ularning soni deyarli kam bo`lganligi uchun

ular yorqin tafovutlanadi. Bunday vaziyatda yuza fakturasining elementlari yuzaning (rel`efni) qismlarga ajratuvchi elementlar hosil bo`ladi.

Tekstura – predmet tayyorlangan materialning yuzasidagi strukturaviy tashqi belgilari kuzatiladi. Ko`pincha tekstura (rasm bilan) yog`och va matodan qilinganlik xususiyatlari bilan ajralib turadi. Turli teksturalar dekorativ element sifatida mahsulotga ishlov berishda foydalaniladi. Tekstura materialiga xos bo`lmagan xususiyatlaridan foydalanmaslik zarur, masalan plastmassaning yog`ochga nisbatan imitatsiyasi va boshqalar. Yog`ochdan teksturali rasm unga ishlov berish yo`nalishiga ko`ra o`zgaradi, ya`ni yassi kesilishi - radial, tangensial, radial-ko`ndalang, tangensial-ko`ndalang. Teksturani aniqlashda rang katta ahamiyatga egadir, ayniqsa yog`och tolalarini tabiiy bo`yashda farqlanadi (kontrast).

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СПОСОБЫ РЕЗЕРВИРОВАНИЯ ДЛЯ ПОВЫШЕНИЯ НАДЕЖНОСТИ

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Аннотация. *В данной статье дано надежность системы управления на определенном уровне строительства*

Ключевые слова: *Надежность, строительства, способов, метод.*

Вероятностный характер строительства заключается в том, что на ход работ все время воздействуют различные случайные факторы. Эти воздействия трудно предвидеть и оценить. Случайные факторы имеют весьма многообразную природу, и последствия их воздействия весьма многообразны.

Надежность – свойство объекта сохранять во времени в установленных пределах значения всех параметров, характеризующих способность выполнять требуемые функции в заданных режимах и условиях применения, технического обслуживания, реставрации, модернизации, ремонтов, хранения и транспортировки. [1]

Надежность является сложным свойством, которое в зависимости от значения объекта и условий его использования состоит из сочетаний безотказности, долговечности, ремонтопригодности и сохранности.

Надежность технологических решений должна обеспечивать бесперебойное функционирование строительного процесса, выбор способа производства, позволяющему строительному потоку функционировать с заданными параметрами, в первую очередь с заданной интенсивностью, таким образом, чтобы отклонения, вызванные случайными производственными факторами, не превышали определенных пределов.

Рассмотрим использование метода резервирования при восстановлении. Чрезвычайные ситуации (ЧС) на железных дорогах приводят к сложным процессам при восстановительных строительных работах. Если имеет место резервный фонд машин, конструкций, бригад и т.д., то при ЧС восстановительный процесс облегчается.

Надежность строительного объекта увеличивается в случае, когда некоторые части объекта можно восстанавливать в процессе работы объекта. Восстановление есть мощное средство повышения надежности при наличии резервного фонда. Уменьшая время восстановления отказавших объектов, имеющих резервный фонд, можно существенно повысить как готовность, так и безотказность объекта.

Особенности восстановления объектов, имеющих резервный фонд, рассмотрим на примере дублированной системы, в которой имеются две одинаковые строительные единицы (бригада, машина, конструкция и т.д.) - основная и резервная.

Предположим, что во время восстановления в строительный единицах (СЕ) не могут возникнуть вторичные отказы. Тогда дублированная система может находиться в одном из трех состояний, которые обозначим цифрами:

О - строительная система работоспособна (СЕ работоспособны);

1 - строительная система работоспособна, но одна СЕ отказала (система стала нерезервированной);

2 - строительная система неработоспособна (отказала).

Обозначим вероятности перечисленных выше состояний через $P_0(t)$, $P_1(t)$, $P_2(t)$. Отметим, что эти вероятности зависят от начального состояния системы, в котором она находилась при $t = 0$. В зависимости от назначения резервного фонда к нему могут предъявляться различные требования:

1. С начала производства строительных работ (строительства или реконструкции железной дороги) строительная система должна безотказно функционировать заданное время; перерывы в работе недопустимы. При этом необходимо знать вероятность

непрерывной безотказной работы системы (вероятность первый раз не оказаться в состоянии 2). Вычисляем условные вероятности безотказной работы на интервале (0, t) при условии, что при t = 0 основная и резервная СЕ работоспособны.

2. Необходимо, чтобы вероятность застать строительную систему работоспособной в любой заданный момент времени t была достаточно высока (перерывы в работе всей строительной системы не играют существенной роли). При этом рассматриваем готовность строительной системы и ее характеристики: функцию готовности Г(t) или коэффициент готовности k_2. Иначе говоря, находиться вероятность не оказаться в состоянии 2. Этот случай отличается от предыдущего тем, что имеется возможность перехода из состояния 2 в состояние 1.

Найдем формулы для функции готовности и вероятности безотказной работы с восстановлением. Предположим, что основная и резервная СЕ равно надежны, имеют показательные распределения времени безотказной работы и времени восстановления, $\lambda_1=\lambda_2=\lambda$, $\mu_1=\mu_2=\mu$, неработающих СЕ невозможны, отказы обнаруживаются мгновенно. Вначале рассмотрим случаи, где отказы допустимы. [2]

Проблема организационно-технологической надежности объединяет теоретические, методологические, практические пути и решения многофакторных организационных задач на различных структурных уровнях сооружения объектов и их эксплуатационного содержания. Надежность системы управления на определенном уровне руководства определяется вероятностью реализации этой системой выработанных решений по выполнению основных функций. В строительстве основной функцией систем управления является обеспечение директивной продолжительности строительства объектов и их комплексов.

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MOVAROUNNAHRGA ISLOM DINING KIRIB KELISHI VA UYG‘ONISH DAVRINING BOSHLANISHI

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Annotatsiya: *Maqolada arablarning Movarounnahrga harbiy yurishlari, mahalliy aholi bilan olib borgan kurashlari, mintaqada islom dining yoyilishi va tariximizning shonli davrlaridan bo‘lgan IX-XII asrlarda Movarounnahrdan yetishib chiqgan mutafakkir olimlar haqida ma’lumot berilgan.*

Annotation: *The article provides information about the military campaigns of the Arabs to Movarounnahr, their struggles with the local population, the spread of Islam in the region, and the thinkers who emerged from Movarounnahr in the 9th-12th centuries, which are the glorious periods of our history.*

Kalit so‘zlar: *Jayhun, strategik, Xuroson, otashparastlik, yakkaxudolik, riyoziyot, falakiyot, tabobat, kimyo, jo‘g’rofiy, Narshaxiy, Tarxun, diplomatiya, Nabatiy, Abu Mansur as-Saolobiy, Muso al-Xorazmiy , Imom al-Buxoriy, Al-Jome’ as- sahih.*

Keywords: *Jayhun, strategic, Khurasan, fire worship, monotheism, mathematics, catastrophe, medicine, chemistry, geography, Narshahi, Tarhun, diplomacy, Nabati, Abu Mansur al-Saalabi, Musa al-Khwarizmi, Imam al-Bukhari, Al- Jame' as- sahih.*

Arab xalifaligi Amudaryo (Jayhun) ning chegaralarigacha bo‘lgan hududlarni egallagach, endi asosiy e’tiborini daryoning shimolidagi hududlarga tomon qaratdi. “Ular bu yerlarni “Movarounnahr” ya’ni (daryoning ortidagi yerlar) deb nom berishadi”[1:28]. “O‘lkaning go‘zal tabiiy iqlimi, behisob boyliklari azaldan barchani, shuningdek, endi arablarni ham diqqat-e’tiborini o‘ziga tortgan edi” [2:129].

Tarixchilarning takidlashicha, arablarning Movarounnahrga dastlabki harbiy yurishlari Ubaydullox ibn Ziyod boshchiligida 651 yilda Marvni egallash bilan boshlangan. Aynan, Marv shahri Amudaryoning shimolidagi yerlarni egallash uchun strategik muhim markaz hisoblangan. Arablar VII asr o‘rtalaridan boshlab 50 yil davomida Movarounnahrga vaqti-vaqti bilan hujumlar uyushtirib turdilar. “VIII asr boshlarida arablar Movarounnahrni hududini to‘liq bosib olishga kirishdilar. Xurosonga noib qilib tayinlangan Qutayba ibn Muslim arablarning Movarounnahrga harbiy yurishiga boshchilik qiladi”[1:28]. Qutayba ibn Muslim boshchiligidagi arablar va mahalliy jangchilar o‘rtasidagi dastlabki yirik to‘qnashuvlar Buxoro atrofida boshlandi. “Buxoro qishloqlaridan Torob, Xunbun va Romtin oralig‘ida ko‘p lashkar to‘planib Qutaybani o‘rab oldilar. So‘g‘d podshoxi Tarxun ko‘p lashkari bilan, Xunukxudot ko‘p askari bilan, Vardonxudot o‘z askari bilan keldilar. Lashkarlar jam bo‘ldilar, Qutaybaning ishi og‘irlashdi”[3:45]. Bunday mushkul vaziyatda arablardan bo‘lgan Xayyoni Nabatiy degan kishi so‘g‘d podshoxi Tarxun bilan uchashib unga: “Biz arablar havo issiq vaqtidagina bu yerda tura olamiz, endi havo sovub qoldi va bizning vaqtimiz yetdi. Toki biz bu yerda ekanmiz bu turklar biz bilan urush qiladilar, bu yerdan ketganimizdan keyin esa sen bilan urush qiladilar, chunki So‘g‘d viloyati yaxshi joy, yaxshilikda unda o‘xshash joy dunyoda yo‘q, qayoqda ular So‘g‘dni senga qoldirib, Turkistonga ketadilar? Ular mamlakatiningni oladilar, sen esa qiyinchilikda qolasan”[3:46] dedi. Bu ogohlantirishdan ziyrak tortgan Tarxun Qutayba ibn Muslim bilan sulh tuzib, unga ikki ming dirham yubordi.

Xayyoni Nabatiy olib borgan diplomatiya natijasida arablar qiyin vaziyatdan chiqib ketishdi va Buxoroga qarab yurish qilib shaharni egallashdi. Qutayba ibn Muslim Buxoroda masjidlar bino qildi, otashparastlik asarlarini yo‘qotdi. Albatta, yo‘q qilingan asarlar orasida qadimgi O‘rta Osiyo tarixiga oid juda ham qimmatli so‘g‘d yozuvidagi ma’lumotlar mavjud bo‘lgan.

Buxorodan so‘ng Xorazm bo‘ysundirildi, navbat o‘sha davrda ham Movarounnahrning eng yirik shahri bo‘lgan Samarqandga keldi. Samarqand mintaqaning yuragi bo‘lganligi uchun tabiiyki uning harbiy salohiyati va mudofaasi ham qolganlardan ancha kuchliroq edi. Buni to‘g‘ri tushungan Qutayba ibn Muslim qon to‘kmaslik, katta talofatlarga uchramaslik maqsadida Samarqandni egallash uchun hiyla ishlatib shaharni tong saharda egallab oldi. Samarqandliklar kutilmagan hujum natijasida hech narsa qila olishmadi, yuz minglik qo‘shin shaharga kirib oldi. Xalq vahimaga tusha boshladi, ularning tafakkuri bo‘yicha shahar egallangandan so‘ng g‘oliblar mag‘lublarning erkaklarini o‘ldirishar, ayollarini cho‘ri qilishar, bolalarini qulga aylantirishar edi. Ammo ular kutgan narsa sodir bo‘lmadi, musulmon qo‘shini odamlardan xol-ahvol so‘rashar, xalqni islom diniga da’vat qilishar edi. Savdogarlar asta sekinlik bilan o‘z savdo do‘konlarini ochishdi, shaharda hayot yana jonlana boshladi. Qutayba ibn Muslim davrida boshqa shaharlar ham musulmonlarga taslim bo‘ldi, hududning juda ham katta qismi Arab xalifaligi tarkibiga qo‘shib olindi. Arablar bu hududlarda islom dinini yoyishga alohida ahamiyat berib, bir qancha amaliy ishlar olib borganlar. Yangi din o‘zida yakkaxudolik g‘oyasini mujassamlashtirgan, xalqlarni birlik, axillik, birodarlik, hamjihatlik, o‘zaro mehr-muruvvatlilik, do‘stlik singari oliyjanob fazilatlarga da’vat etuvchi islom dini har qanday to‘siqlarni, qiyinchiliklarni bartaraf etib, turli-tuman O‘rta Osiyoning mahalliy xalqlari ongi, qalbiga yo‘l topib, xalqlarni birlashtirdi.

Bu davrda Arab xalifaligi tarkibiga Movarounnahrdan tashqari Yaqin va O‘rta Sharq mamlakatlarining barchasi, Arabiston yarim oroli, Shimoliy Afrika, Ispaniya va Kavkaz orti davlatlari kirar edi. Xalifalikning rasmiy tili hisoblangan arab tili uning tarkibiga kirgan barcha xalqlar uchun o‘zaro muomala vositasiga aylandi. Natijada turli xalqlar ushbu til yordamida bir birlarining fan va madaniyat yodgorliklar bilan tanishdilar va bu sohalardagi yutuqlarini o‘zaro baham ko‘rdilar.

Qisqa fursat ichida Movarounnahrning Buxoro, Samarqand va boshqa shaharlar o‘zlarining buyuklarini yetishtira boshladi. Taqdirni qarangki, bir paytlar bizga islom dinini olib kelgan arablarga tez orada bizning yurtimizdan chiqgan ajdodlarimiz ham dunyoviy ham diniy sohada ustozlik qilishdi. “Tarixchi Abu Mansur as-Saolobiy O‘rta Osiyoning islom dini kirib kelgandan keyingi IX-XII asrlardagi ahvoliga quyidagicha tarif beradi: Shon-shuhrat makoni, saltanat ka’basi va zamonasining ilg‘or kishilari jamlangan, yer yuzi adiblarining yulduzlari porlagan hamda o‘z davrining fozillari yig‘ilgan joy edi”[4: 4].

“IX-XII asr Sharq xalqlari fani va madaniyatidagi ilmiy yuksalish, shubhasiz, ko‘p jihatlari bilan O‘rta Osiyo olimlarining samarali ijodi tufayli vujudga keldi. Bu davrda riyoziyot, falakiyot, tabobat, kimyo, jo‘g‘rofiya, tilshunoslik, hadisshunoslik, adabiyot va xatto musiqa sohalaridagi yangi kashfiyotlarni O‘rta Osiyo olimlarining xizmatlarisiz tasavvur etib bo‘lmaydi” [5.13].

O‘rta Osiyo zaminidan juda ko‘plab mutafakkir olimlar yetishib chiqgan bo‘lib, shulardan biri muarrixlar tomonidan dunyoviy sohada O‘rta Osiyo olimlarining ustozi deb tarif beriladigan zamonasining buyuk matematik, astronom, geograf va tarixchisi Muhammad ibn Muso al-Xorazmiydir (789-850). “Olim o‘zining “Hisob al jabr val Muqobala”, “Hind arifmetikasi haqida kitob”, “Quyosh soatlari haqida risola”, “Astronomik jadvallar” singari asarlari bilan “Algebra” faniga asos soldi. Olimning “Kitob surat al-arz” nomli geografiyaga doir asari shu qadar fundamental ahamiyatga egaki, u arab tilida ko‘plab geografik asarlarning yaratilishiga zamin

yaratdi. Uning Sharq geografiyasining otasi deb nomlanishi ham shundan. Xorazmiy yaratgan “Zij” Yevropada ham, Sharqda ham astronomiya fanining rivojlanishi yo‘llarini belgilab berdi. Alloma qalamiga mansub “Kitob at-tarix” (“Tarix kitobi”) asari Movarounnahr, Xuroson va Kichik Osiyo halqlarining VIII-IX asrlarga oid tarixini to‘laqonli yoritishda muhim qo‘llanmadir” [6].

Qadim ajdodlarimiz o‘z taraqqiyotlarining cho‘qqisiga erishgan IX-XII asrlarda nafaqat dunyoviy fanlarda yuksalib borishdi, shu bilan birga islomiy madaniyat va ma’naviyatni ham shakllantirib bordilar.

Diniy sohada yetishib chiqgan yetuk mutafakkir olimlardan biri bu, Imom Ismoil al-Buxoriy (810-870) hazratlaridir. “Imom Buxoriy hayoti davomida 90 ga yaqin ustozlardan ta’lim olgan bo‘lib, 600 mingga yaqin hadis yod olgan” [6]. Manbalarda keltirilishicha, Imom al-Buxoriy o‘z ijodiy faoliyati davrida yigirmadan ortiq asar yozgan. “Imom Buxoriyning eng muhim va mashhur asari “Al-Jome’ as- sahih” asaridir. Bu asarning to‘liq nomi “al-Jome’ al-musnad as-sahih al-muxtasar min umuril Rasulullоh (sollallohu alayhi vasallam) va sunanihi va ayyamihi” deb nomlagan” [7]. Imom Buxoriy: “Bu “Al-Jome’ as- sahih” asarini o‘n olti yilda yozganman va olti yuz ming hadisdan chiqarib olganman va bularni o‘zim bilan Allohning o‘rtasida hujjat qildim” [8: 84.] deb aytgan. Bundan tashqari olim “Al-Adab al-mufrad (Adab durdonalari), Kitob al-kuna (Kunyalar haqida kitob), Xalq af’ol al-ibod (Alloh bandalari ishlarining yaratilishi), al-Musnad al-kabir (Katta musnad), Asomiy as-sahoba (Sahobalarning ismlari)” [9] va boshqa asarlarning muallifidur.

Arablarning Movarounnahrga harbiy yurishlarining amalga oshirilishi va mintaqaning Arab xalifaligi tarkibiga qo‘shib olinishi, shu yerlik xalqlar uchun ijobiy tasir qildi. Albatta, arablarning Movarounnahrga yurishlari davomida qadim tariximizdan xabar beradigan ko‘plab asarlar yo‘q qilindi. Buning natijasida tariximizning ma’lum davrlari mavhumligicha qoldi. Ammo bu bilan arablar bizga faqat zarar keltirishgan degan xulosaga kelmaslik kerak, sababi ular olib kelgan yangi islom dini va shu din asosida shakllangan madaniyat, xalqlarimizning keyingi davrlar yuksak taraqqiyoti uchun poydevor yaratdi. Al-Xorazmiy, Ahmad al-Farg‘oniy, Abu Rayhon Beruniy, Abu Ali ibn Sino, Abu Nasr Farobiy, Mahmud az-Zamaxshariy, Imom al-Buxoriy, Abu Mansur al-Moturidiy, Imom at-Termiziy kabi o‘z davrining yetuk mutafakkir olimlarining O‘rta Osiyo zaminidan aynan islom dini mintaqamizga kirib kelganidan so‘ng yetishib chiqishganliklarini alohida qayd etishimiz lozim.

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THE NUMBER OF THE NEED FOR TECHNIQUES DEVELOPMENT OF THE METHOD OF DETERMINATION

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Annotation. *This article discusses the results of a study to develop a methodology for calculating the need for road equipment and special machines for the construction and repair of highways. As a result, a flowchart algorithm has been developed to calculate the need for road equipment and special machines for the construction and repair of highways.*

Key words: *automobile road, construction, productivity, road machines, mechanism, norma, power, metod, algoritm.*

Introduction. Determining the number of vehicles required for road construction and repair works can be done in several ways, including: using the equipment's time availability, work efficiency and regulatory documents. In most cases, which method to use, it is necessary to pay attention to the main indicators of road equipment, indicators of road work, the types of road construction and special machines that affect the work process, their main parameters, their compatibility with each other in terms of work performance, and other parameters.

Method. Determining the number of necessary equipment required for construction and repair work on highways, road construction and special machines and mechanisms based on the daily operating efficiency and time standards available normative documents SNiP, ENiR, MShN. It is determined by the following expression using the values of MQN, SNiP, and ENiR

$$П_к = \frac{t_{см}}{[t]} \cdot [V]$$

in expression $t_{см}$ – duration of daily working hours, $t_{см}$ = 8,0;

$[t]$ – normative time in normative documents SNiP, ENiR, MShN. For the unit of measurement given in MQN, SNiP and ENiR, i.e. to perform work volume [V];

$[V]$ – standard volume of work, MShN in regulatory documents. For the unit of measurement specified in MQN, SNiP and ENiR.

The annual productivity of road equipment and special machines in highway construction and repair is calculated by the following expression:

$$П_{й} = П_к \cdot n_к \cdot k_в$$

where: $П_к$ - is the daily operating productivity of road equipment and special machines;

$n_к$ - working days during the year;

$k_в$ - coefficient of time use of road equipment and special vehicles.

The amount of road work performed in the construction and repair of the highway is determined by the following expression:

$$W = L \cdot B \cdot h \cdot \delta$$

where: L – the length of the daily coverage distance of the highway, m;

B – width of the road under construction or repair, m;

h - layer thickness of the highway under construction or repair, m;

δ – volume relative weight of construction materials used in road construction and perfect repair, m^3/t.

The required number of machines and mechanisms is determined by the following expression:

$$N = \frac{W}{П_{й}}$$

Calculation of the required number of machines and mechanisms in the construction and perfect repair of the highway according to the performance of the machines

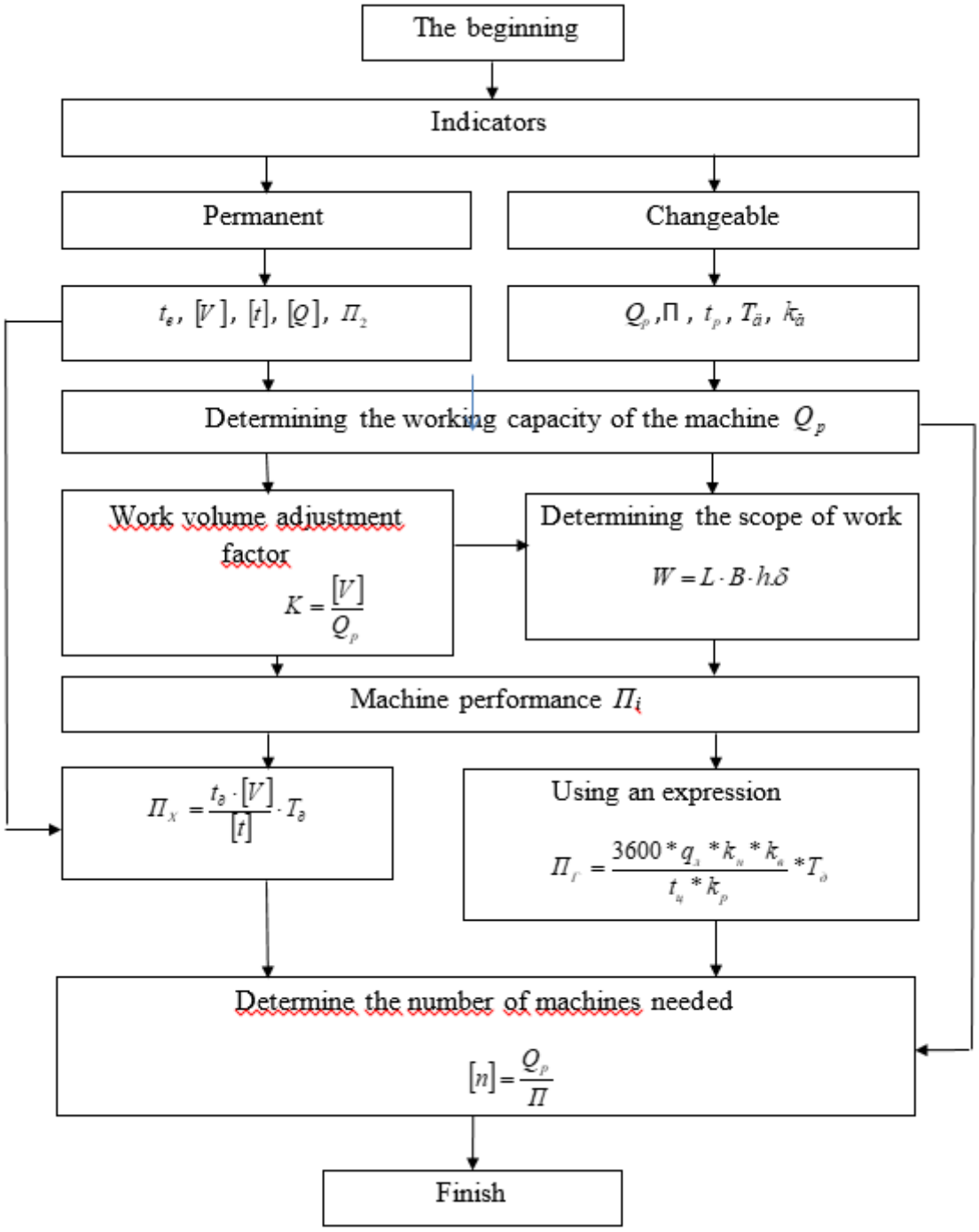

Figure 1. Algorithm for determining the number of machines needed block diagram.

Conclusion. Based on the results of the conducted research, a methodical instruction was developed for determining the required number of required equipment for road equipment and special vehicles in the construction and repair of the highway. In the study, a methodical instruction was developed for determining the number of road equipment and special vehicles needed for the daily volume of work performed in the construction and repair of public highways, taking into account the standard times of the vehicles. As a result of scientific research, a block diagram of the algorithm for determining and calculating the number of needs for road equipment and special machines was developed.

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MARKAZIY OSIYO RIVOJIDA YANGI O‘ZBEKISTON YURITAYOTGAN SIYOSIY FAOLIYATNING AHAMIYATI

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Annotatsiya: Maqolada Markaziy Osiyo uchun muhim ahamiyatga ega bo‘lgan, bugungi kunning eng dolzarb muammolariga adolatli yechim taklif etayotgan, tashqi siyosiy faoliyatda katta foyda keltiradigan shartnomalar imzolashda yetakchi o‘rinni egallab turgan yangi O‘zbekistonning tashabbuslari yoritilgan.

Kalit so‘zlar: Barqarorlik, tinchlik, konferensiya, tashabbus, siyosat, Tolibon, dekloratsiya, terrorizm, Afg‘oniston, muzokara, shartnoma.

Annotation: The article highlights the initiatives of the new Uzbekistan, which is important for Central Asia, offers a fair solution to today's most urgent problems, and takes a leading position in signing agreements that bring great benefits in foreign political activity.

Keywords: Stability, peace, conference, initiative, policy, Taliban, declaration, terrorism, Afghanistan, negotiation, agreement.

Kirish. Markaziy Osiyo mintaqasi tarixan qudratli davlatlar raqobat maydoni, turli manfaatlar to‘qnashgan nuqta bo‘lib kelgan. Xalqaro miqyosdagi munosabatlarda raqobat maydoni bo‘lgan mintaqani boshqarish va nazorat qilish mexanizmini shakillanish jarayoning tarixiy asoslari mavjud. Markaziy Osiyo mintaqasida xavfsizlik va barqarorlikni ta’minlashda O‘zbekiston Respublikasi bir qator tashabbuslari, tinchlik va barqarorlikni ta’minlashjagi bir qator tashabbuslarining o‘rni va ahamiyati muhim hisoblanadi. Mintaqada xavfsizlikni ta’minlash borasida mamlakatimiz tomonidan bir necha xalqaro tashkilotlar dorasida muhim tashabbuslar ilgari surilib kelinmoqda. Prezidentimiz Shavkat Mirziyoyev tashabbusi bilan 2018 yil 26-27 mart kunlari Toshkent shahrida “Tinchlik jarayoni, xavfsizlik sohasida hamkorlik va mintaqaviy sheriklik” mavzusida dunyoning 20 dan ortiq davlat delegatlari ishtirokida bo‘lib o‘tgan xalqaro konferensiya ham buning yaqqol isboti desak to‘g‘ri bo‘ladi. Shuningdek, deklaratsiya matnida “Tolibon” harakati vakillari ham Afg‘onistonda yuz berayotgan siyosiy jarayonlarda legitim ishtirokchi sifatida qatnashishi etirof etildi. Anjumanda ishtirok etgan barcha davlatlar BMT Bosh assambleyasi va Xavfsizlik Kengashining, jumladan, 2018 yil 19 yanvar kuni Nyu York shahrida bo‘lib o‘tgan BMT Xavfsizlik Kengashining Markaziy Osiyo va Afg‘oniston bo‘yicha majlisidan so‘ng Afg‘oniston va Markaziy Osiyo o‘rtasida shakllantirilgan yangi sheriklikka doir rezalyutsiyalari va qarorlarini qo‘llab-quvvatlashini qat’iy bildirgan. Milliy Birdamlik hukumatining toliblar bilan keng ko‘lamli tinchlik kelishuviga erishish bo‘yicha pirovard maqsad yo‘lida oldindan hech qanday shart qo‘ymaslik asosida “Tolibon” bilan tug‘ridan-tug‘ri muzokaralar o‘tkazishni boshlash haqidagi xalqaro hamjamiyat tomonidan qo‘llab-quvvatlanayotgan taklifini qat’iy qo‘llab-quvvatlashimizni ta’kidlaymiz hamda “Tolibon”ni Afg‘oniston rahbariyati va ushbu mamlakat xalqining o‘z sa’y-harakatlari bilan va Birlashgan Millatlar Tashkiloti Bosh Assambleyasi va Xavfsizlik Kengashining tegishli rezolyutsiyalariga muvofiq amalga oshirilayotgan tinchlik o‘rnatish jarayoniga doir ushbu taklifni qabul qilishga chaqiramiz, deyiladi dekloratsiya matnida[1:1-3-b].

Konfrentsiya ishtirokchilari Afg‘oniston hukumati va “Tolibon” ning murosasiz vakillari o‘rtasida oldindan hech qanday shart qo‘ymasdan to‘g‘ridan-to‘g‘ri tinchlik muzokaralarini o‘tkazish zarurati mavjudligini qayd etib o‘tgan [2:3-b]. Konfrentsiya ishtirokchilari bo‘lgan Markaziy Osiyo, Rossiya va AQSh vakillari Afg‘onistonni beqarorlashtirish va mojaroni uzaytirishga olib keluvchi “Tolibon” va IShIDga har qanday moliyaviy, moddiy ko‘mak yoki qurol-yarog‘ taqdim etilishiga qat’iy qarshiligini bildirgan. Afg‘oniston masalasiga bag‘ishlangan ushbu tinchlikparvar konfrentsiya va “Toshkent deklaratsiyasi” Markaziy Osiyo mintaqasi xavfsizligi, xususan, O‘zbekiston xavfsizligini ham kafolatladi. Deklaratsiyada belgilangan masalalar kelajakda mintaqa davlatlarining barchasida xavfsiz ta’minoti uchun xizmat qiladi. Prezident Shavkat Mirziyoyev “Tinchlik jarayoni, xavfsizlik sohasida hamkorlik va mintaqaviy sheriklik” mavzusidagi xalqaro konfrentsiyada bir necha muhim takliflar bilan chiqdi. Takliflar doirasida Afg‘on yoshlarini o‘qitish, ta’lim berish va istiqbolli kelajak yaratish borasidagi taklifi konferensiya ishtirokchilari, ayniqsa Afg‘oniston hukumati vakillarida katta qiziqish uyg‘otdi. Mamlakatimiz Prezdentining afg‘on masalasi bo‘yicha dolzarb takliflari dunyoning etakchi davlatlari tomonidan qo‘llab-quvvatlanayotganligi va xalqaro tashkilotlar rahbarlari tomonidan e’tirof etilayotganligi kishini quvontiradi. Afg‘onistonda 2017 yil davomida “Tolibon” va IShID terrorchilik guruhining hujumlari oqibatida 10 mingdan ortiq tinch aholi halok bo‘lgan [3]. Bu holatni kuzatar ekansiz, mamlakatimiz rahbari tomonidan tinch muzokaralar, bitimlar tuzgan holda Afg‘onistondagi jangari kuchlar, ayniqsa “Tolibon” vakillari bilan o‘zaro tinch muzokaralar orqali bitimga erishish masalasa bu boradagi eng oqil qaror hisoblanadi.

Prezidentimiz Birlashgan Millatlar Tashkiloti Bosh Assambleyasining 72 sessiyasida so‘zlagan nutqida ushbu dolzarb masalaga e’tibor qaratishkechiktirib bo‘lmas vaziqa ekanligini ta’kidlagan edi. Prezidentimiz ushbu yiriu anjum anda “Dunyoda terrorizm tahdidlari ayniqsa, so‘nggi yillarda kuchayib borayotgani ularga qarshi asosan kuch ishlatish yo‘li bilan kurashish usuli o‘zini oqlamayotganidan dalolat beradi. Bu borada ko‘p hollarda tahdidlarni keltirib chiqarayotgan asosiy sabablar bilan emas, balki ularning oqibatlariga qarshi kurashish bilangina cheklanib qolinmoqda. Xalqaro terrorizm va ekstremizmning ildizini boshqa omillar bilan birga, jaholat va murosasizlik tashkil etadi, deb hisoblayman. Shu munosabat bilan odamlar, birinchi navbatda, yoshlarning ongu tafakkurini ma’rifat asosida shakllantirish va tarbiyalash eng muhim vazifadir. Ekstremistik faoliyat va zo‘ravonlik bilan bog‘liq jinoyatlarning aksariyati 30 yoshga etmagan yoshlar tomonidan sodir etilmoqda. Bugungi dunyo yoshlari – son jihatidan butun insoniyat tarixidagi eng yirik avloddir, chunki ular 2 milliard kishini tashkil etmoqda. Sayyoramizning ertangi kuni, farovonligi farzandlarimiz qanday inson bo‘lib kamolga etishi bilan bog‘liq” [4:3-b] deb ta’kidlab o‘tgan edi. Mintaqa kelajagi va uning istiqbolda taraqqiy etishi avvolo shu hudududa yashayotgan yoshlar kentingenti bilan ham o‘lchanadi. Markaziy Osiyo mintaqasida yoshlar hisobi bo‘yicha O‘zbekiston eng etakchi davlat hisoblanadi. Shu o‘rinda mintaqa kelajak xavfsizligiga daxldor sifatida O‘zbekiston tashabbusi bilan Samarqand shahrida bo‘lib o‘tgan birinchi “Markaziy Osiyo Yoshlar forumi” ushbu tashabbuslarning yorqin namunasi hisoblanadi. O‘zbekiston yoshlar ittifoqi, Qozog‘iston “Nur otan” partiyasining “Jas otan” yoshlar qanoti, Qirg‘iziston davlat yoshlari, jismoniy tarbiya va sport sohasi agentligi, Tojikiston hukumati yoshlar va sport qo‘mitasi, Turkmanistonning sport va yoshlar siyosati vazirligi hamda Maxtumquli nomidagi Turkmaniston yoshlar tashkiloti kengashi vakillari ishtirok etgan edi. Ushbu forum davomida bo‘lib o‘tgan “Fan va ta’lim rivojida yoshlarning roli” mavzusidagi davra suhbatida Markaziy Osiyo yoshlarining ilm-fanga bo‘lgan qiziqishi, erishgan yutuqlari tahlili ham

o‘rganilgan edi. Tadbirda ishtirok etgan O‘zbekiston Respublikasi Oliy va o‘rta maxsus ta’lim vaziri o‘rinbosari Uzoq Begimqulov mintaqadagi oliy o‘quv yurtlarining o‘zaro hamkorligi xususida to‘xtalib, yurtimizning qo‘shni mamlakatlar bilan bilan ta’lim sohasidagi aloqalari mustahkamlanganini takidlab o‘tgan edi. Kelajakda Markaziy Osiyo mamlakatlararo mahalliy normativ hujjatlarni ishlab chiqish, oliygohlarda xalqaro kordinat, o‘quvchi-yoshlarning idora va klublari, talabalar hukumati faoliyatini yo‘lga qo‘yish bo‘yicha takliflar bildirilgan edi[5:1-b].

Prezidentimiz Shavkat Mirziyoyev 2017 yil 24 yanvarda Respublika Baynalmilal madaniyat markazi tashkil etilganligining 25 yilligiga bag‘ishlangan uchrashuvdagi nutqida ham Markaziy Osiyo millatlari bir necha ming yillar mobaynida bir o‘lkada yashab kelganligi, tili, dini, suvi bir bo‘lgan xalqlar o‘zaro ishonch va mustahkam hamkorlikda yashashini yana bir bor ta’kidlab o‘tgan edi. Xususan, Prezidentimiz bu borada “Ma’lumki, bizning qadimiy va saxovatli zaminimizda ko‘p asrlar davomida turli millat va elat, madaniyat va din vakillari tinch totuv yashab kelgan. Mehmondo‘stlik, ezgulik, qalb sahovati va tom ma’nodagi bag‘rikenglik bizning xalqimizga doim xos va uning mentaliteti asosini tashkil etadi” deb ta’kidlagan edi.

Siyosatchi B.Vetsel Markaziy Osiyo davlatlari maslahat uchrashuvi yakunlariga oid chop etilgan materiallarni tahlil qilib chiqqanini aytib o‘tgan edi. Uning so‘zlariga ko‘ra, agar davlat transchegaraviy hamkorlikni jadallashtirib, umummintaqaviy muammolarni yechish uchun sa’y-harakatlarni hamkorlikda safarbar etsa va o‘z salohiyati bilan bo‘lishsa, bu horijlik sarmoyadorlar uchun mintaqa jozibadorligi hamda undagi yangi qo‘shma loyihalarni amalga oshirish layoqatini sezilarli ravishda yuksaltiradi. Xulosa sifatida aytish mumkinki, ushbu jarayonlar mintaqamizda O‘zbekistonning nufuzi oshishi va xalqaro miqyosdagi hamkorlik aloqalari yanada mustahkamlanishiga xizmat qilmoqda. Yildan yilga mustahkamlanib borayotgan ushbu aloqalar mamlakatimiz chegaralar daxlsizligi va barqaror iqtisodiyotni ta’minlashga xizmat qiladi. Mintaqada vaziyatni boshqarish va tinchlikni mustahkamlash doirasida yangi tuzilma sifatida vuzudga kelgan Markaziy Osiyo mamlakatlari rahbarlari maslahat Kengashining faoliyati yo‘lga qo‘yilishi, Turkiy davlatlar hamkorlik Kengashi doirasida mintaqa mamlakatlari o‘rtasida hamkorlikning yanada mustahkamlanishi yurtimizning barqaror taraqqiyotiga xizmat qiladi.

Foydalanilgan adabiyotlar

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ВЫБОР И ОБОСНОВАНИЕ КИНЕМАТИЧЕСКИХ ХАРАКТЕРИСТИК ПЛАНЕТАРНОГО МЕХАНИЗМА ПРИВОДА ДЛЯ РАБОЧЕГО ОРГАНА МИКСЕРА

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Аннотация

В статье приведены кинематический анализ переносных и стационарных планетарных миксеров. По литературным источникам выявлено, что планетарные миксеры обладают большим преимуществом в виде: компактности, бесшумности, меньшей массы, большой нагрузочной способности при сравнительном высоком КПД, возможность получения больших передаточных чисел и передачи вращения на ведомый вал от ведущего электродвигателя. Предлагается кинематическая схема двухсателлитного планетарного механизма с эпициклоидальной передачей.

Ключевые слова: *миксер, сателлит, планетарный механизм, водило, шестерня, колесо, рабочий лопасть, передаточное число, частота вращения, редуктор.*

Abstract

In article are resulted the kinematic analysis of portable and stationary planetary mixers. Under references it is revealed that planetary mixers possess the big advantage in a kind: compactness, noiselessness, smaller weight, the big loading ability at comparative high efficiency, possibility of reception of the big reduction ratios and rotation drive on a main shaft from the leading electric motor. The kinematic scheme of the two satellite planetary gear with epi-cycle drive is offered.

Keywords: *a mixer, the satellite, the planetary gear, drive, a pinion gear, a wheel, the worker the blade, reduction ratio, rotary speed, a reducer.*

Введение. В последнее время в технологических процессах появились новые разнообразные миксеры: ручные (переносные) и стационарные. Миксеры по виду передачи привода подразделяются на два вида: простые (ротационные, двухротационные) передачи и сложные – планетарные эпициклические механизмы. Они обладают ряд преимуществами перед простыми плоскими механизмами, среди которых основным звеном является более естественные воспроизведение требуемых пространственных движений. Месильные органы миксера совершают планетарновращательное движение и обладают максимально качественное смешивание (взбивание) белковых масс или бисквитного теста. Ручные миксеры предназначены для домашнего обихода в объёме работы в пределах от 1 до 2-х литров смешанной массы. Стационарные миксеры используются в кондитерской промышленности для выпечки в технологических конвейерах (линиях) для производства широкого ассортимента кулинарных изделиях.

Методика исследований. В статье предлагается теоретические разработки планетарного миксера, который осуществлялись по методике основных положений теории механизмов и машин, технологических процессов и аппаратов пищевого производства. При этом исследованы результаты машинного анализа графиков и литературные данные.

Результаты исследований. Установлено, что миксеры по технологическим процессам приготовление смеси подразделяются на два вида:

- взбивание белковых масс, сливок и кремов, т.е. они предназначены для перемешивания жидких смесей;

- взбивание бисквитного теста, мягкого песочного дрожжевого теста, картофельного пюре, т.е. они предназначены для перемешивания густых смесей.

Поэтому у этих миксеров рабочие лопасти вращаются с различными скоростными параметрами.

В Ташкенте производится сборка и наладился выпуск переносного (ручного) миксера совместно с китайско-узбекскими предпринимателями. На рисунке 1(а) приведен стационарный планетарный миксер «Комета-100» фирмы «Восход» выпускаемый в городе Саратове (Россия) [1], а на рисунке 1(б) даётся кинематическая схема данного планетарного миксера, где: 1 – электродвигатель; 2 – муфта; 3 – шестерня; 4 – зубчатое колесо; 5 – солнечное зубчатое колесо; 6 – сателлит; 7(Н) – водило; 8 – вал; 9 – месильный рабочий орган в виде пруткового венчика. Имеет потребляемую мощность, $P_n = 4{,}9$ кВт четыре скорости месильного органа, выраженный в частоте вращения сателлита от 50 до 265 об/мин, объем дежи (посуды) составляет 100л. Также данная фирма выпускает следующие конструкции план миксера «Комета-60» и «Комета-40-01». Цифры 60 и 40 означает производительность планетарного миксера в объеме взбитых смесительных масс – 60 и 40 литров. Здесь, как видно из кинематической схемы (рисунок 1,б) приводится односателлитный планетарный механизм, хотя в планетарных передачах для уравновешивания звеньев механизма применяется двух или трёх сателлитный планетарный механизм и устанавливается при симметричном расположении сателлитов на водиле. Также, в планетарном миксере (рисунок 1,а) применяется рабочий орган лопасти в виде пруткового венчика имеющий геометрическую форму сжатого эллипсоида вращения, который по габариту превышает и выходит за рамку оси вращения водила, т.е. расположен в смешанном положении от оси вращения вала водила.

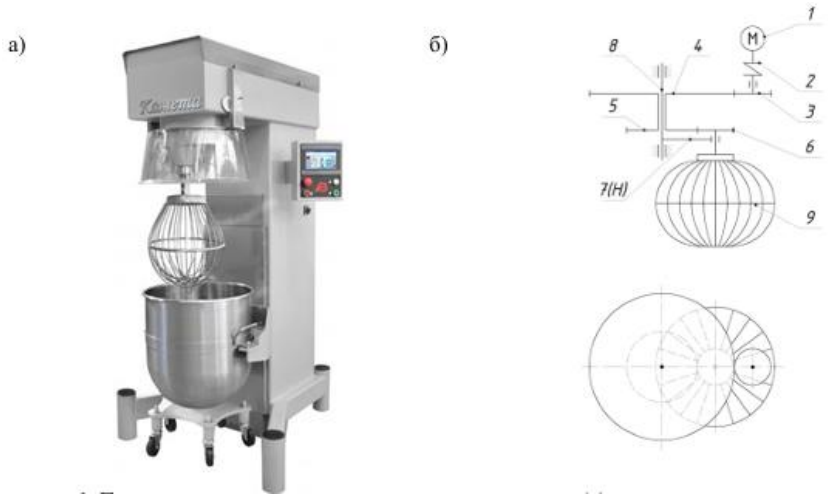


Рисунок 1. Промышленная установка планетарного миксера (а) и кинематическая схема (б) односателлитного планетарного миксера, где: 1 – электродвигатель, 2 – муфта, 3 – шестерня, 4 – простое зубчатое колесо, 5 – солнечное колесо, 6 – сателлит, 7(Н) – водило, 8 – вал, 9 - месильный орган венчика сжатого эллипсоидального вращения. По выявленным недостаткам при анализе конструкции рабочих органов планетарного миксера и преимущества эпициклических передач позволяет конструировать камеру смешивания рабочих органов, совершающих планетарное движение. Поэтому мы предлагаем усовершенствовать данную конструкцию и предлагаем свою кинематическую схему планетарного двухсателлитного механизма (рисунок 2).

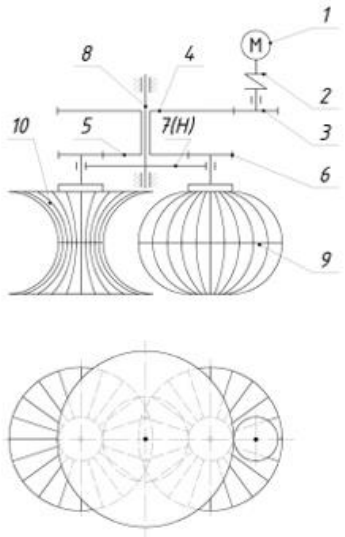
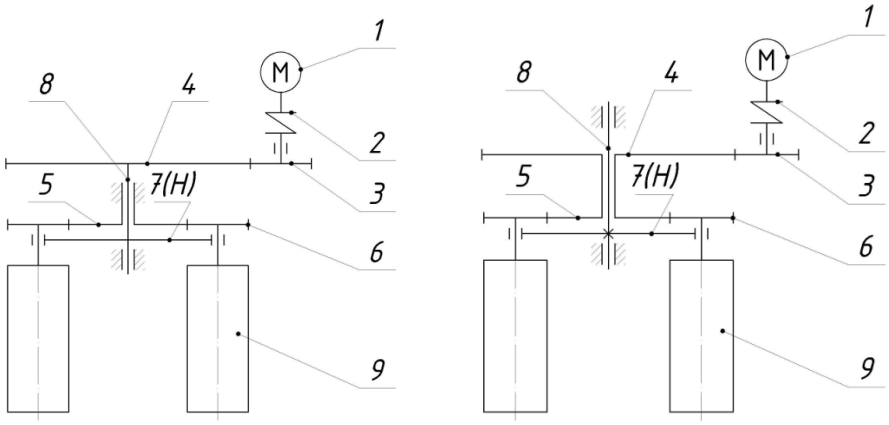


Рисунок 2. Кинематическая схема двухсателлитного планетарного механизма для привода рабочего органа миксера, где: 1 – электродвигатель, 2 – муфта, 3 – шестерня, 4 – простое зубчатое колесо, 5 – солнечное колесо, 6 – сателлит, 7(Н) – водило, 8 – вал, 9 - месильный орган венчика сжатого эллипсоидального вращения; 10 – месильный орган венчика однополюсного гиперболоида вращения.

В результате этого достигается более равномерное распределение жидких компонентов в смеси и получение взбитых белковых масс в начальной стадии замеса однородной структуры. Здесь предлагается двухсателлитный эпициклический планетарный механизм, один из рабочих органов 9 остается как сжатая эллипсоида вращения, а другой рабочий орган 10 – имеет геометрическую форму в виде однополюсного гиперболоида вращения.

Если планетарная передача предназначена для понижения угловой скорости ω_c ведомого вала (сателлита) при $n_1 > n_2$ тогда U>1, то такая передача является планетарной передачей редукторного типа, а если передача предназначена для повышения угловой скорости ω_c ведомого вала (сателлита) при $n_1 < n_2$ тогда U<1, то тогда такая передача – планетарная передача мультипликаторного типа [2].

На рисунке 3 (а) показан кинематическая схема планетарной передачи редукторного типа, а на рисунке 3 (б) приведен планетарная передача мультипликаторного типа.



а) б)

Рисунок 3. Кинематическая схема планетарного механизма редукторного (а) и мультипликаторного (б) типа, где: 1 – электродвигатель, 2 – муфта, 3 – шестерня, 4 –

простое колесо, 5 – солнечное колесо, 6 – сателлит, 7(Н) – водило, 8 – вал, 9 – рабочий лопасть.

Зубчатые передачи (3, 4) установлены от электродвигателя (1) до привода рабочего органа (9) планетарного миксера последовательно друг за другами, в начале простые зубчатые передачи а за ним планетарный передачи, т.е. выбраны комбинированными передачами: состоящие из простых (3 и 4) и планетарных передач (5,6,7) и рассчитываются как общие передаточные числа [3]

$$U_{\text{общ}} = U_{34} \cdot U_{\text{пл5Н}} \qquad (1)$$

где U_{34} – простое передаточное число зубчатой передачи

$$U_{34} = (-1)\frac{z_4}{z_3} \qquad (2)$$

z_3, z_4 – число зубьев ведущего и ведомого колеса зубчатой передачи;

Знак минус (-1) показывает, что валы у зубчатых колёс 3 и 4 вращаются в противоположные стороны; z_3 - число зубьев в шестерне 3; z_4- число зубьев в зубчатом колесе 4;

$$U_{\text{пл5Н}} = 1 - U_{56}^{H} \qquad (3)$$

$U_{\text{пл5Н}}$ – планетарное передаточное число; U_{56}^{H} – планетарное передаточное число при остановленном водиле;

$$U_{56}^{H} = (-1)\frac{z_6}{z_5} \qquad (4)$$

z_6 – число зубьев сателлита 6; z_5 – число зубьев центрального (солнечного) колеса 5.

Для расчета комбинированной зубчатой передачи привода рабочего органа планетарного миксера задаемся численными значениями зубчатых колёс z_3 (3); z_4 (4); z_5 (5); z_6 (6) и определяем передаточное число $U_{\text{общ}}$ для каждой кинематической схеме по рисункам 2.1 ÷ 2.4: $z_3 = 16$; $z_4 = 64$; $z_5 = 50$; $z_6 = 20$. Количество сателлитов для каждой кинематической схеме выбираем два, $к = 2$. На рисунке 3 (а) показан планетарный механизм редукторного типа с внешним зубчатым зацеплением или эпициклический планетарный механизм. Передаточное отношение привода рабочего органа планетарного миксера устанавливается как произведение двух передаточных отношений: простых U_{34} и планетарных $U_{\text{пл5Н}}$ передач, т.е.

$$U_{\text{общ}} = U_{34} \cdot U_{\text{пл5Н}}$$

где U_{34} – простое передаточное число

$$U_{34} = (-1)\frac{z_4}{z_3} = (-1)\frac{64}{16} = -4 \qquad (2)$$

$U_{\text{пл5Н}}$ – планетарное передаточное число

$$U_{\text{пл5Н}} = 1 - U_{56}^{H} = 1 - (-1)\frac{z_6}{z_5} = 1 + \frac{z_6}{z_5}$$

или

$$U_{\text{общ}} = U_{34} \cdot U_{\text{пл5Н}} = (-1)\frac{z_4}{z_3} \cdot \left(1 + \frac{z_6}{z_5}\right) = -\frac{64}{14} \cdot \left(1 + \frac{20}{50}\right) = -5{,}6$$

Знак минус у передаточного отношения U_{34} и U_{65} показывает, что валы зубчатых колес 3 и 4, а также солнечное колесо 5 и сателлиты 6 вращаются в противоположных направлениях.

При номинальной потребляемой мощности планетарного миксера электродвигателя Р=5кВт и частоты вращения ротора электродвигателя *n=500 об/мин*, то тогда частота вращения лопасти рабочего органа миксера будет

$$n_{\text{л}} = \frac{n}{U_{\text{общ}}} = \frac{500}{5{,}6} \approx 90 \text{ об/мин}$$

Выводы: Преимуществами предлагаемой кинематической схемы планетарного миксера являются:

- малые габаритные размеры и масса. Это объясняется тем, что мощность передаётся по нескольким потокам, численно равным числу сателлитов, поэтому нагрузка на зубья в каждом зацеплении уменьшается в несколько раз;

- вследствие соосности ведущих и ведомых валов эти передачи удобны для компоновки машин;

- работают с меньшим шумом, чем обычные зубчатые, что связано с меньшими размерами колёс и при симметричном расположении сателлитов, взаимном уравновешиванием вил;

- малые нагрузки на опоры, что позволяет упростить конструкцию опор и снизить в них потери;

- планетарный принцип передачи движения позволяет получить большие передаточные отношения при небольшом числе зубчатых колёс и малых габаритных размерах.

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БАЗОВЫЕ ТРЕБОВАНИЕ ЗЕМЛЯНОГО ПОЛОТНО МАГИСТРАЛЬНЫХ ЖЕЛЕЗНЫХ ДОРОГ

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Аннотация. *В данной статье дано основные требование повышения несущую способность земляного полотна, особенно для скоростных и высокоскоростных магистралей.*

Ключевые слова: *земляного полотно, строительства, требование, железных дорог*

При проектировании, строительстве, реконструкции эксплуатации земляного полотна скоростных и высокоскоростных железных дорог отдельные его параметры устанавливаются на базе инженерного решения и анализа работы сооружения. Таких параметров немного, основными являются следующие[1]:

- ширина основной площадке земляного полотна скоростных двухпутных дорог – 13 м, исходя из необходимости размещения балластной призмы, опор контактной сети, ширины обочин и лотков для прокладка кабеля;
- наименьшая высота насыпи в уровне бровке земляного полотна, опирающегося на сухое, прочное основание из глинистых грунтов, определяется величиной не менее высоты защитного слоя. В полувыемках – полунасыпях и на косогорах под основной площадкой земляного полотна обеспечивается одинаковая плотность грунтов, исключающая возможность их неравномерного уплотнения и развития деформаций в процессе эксплуатации;
- возвышение бровки основной площадки земляного полотна устанавливается: над уровнем снежного покрова – не менее чем на 1 м; над расчетным уровнем длительного стояния воды (более 20 дней) или над уровнем грунтовых вод – не менее чем на 1.5м;над расчетным уровнем воды при поводках – не менее чем на 0.2 м и при исключении обводнения подошвы защитного слоя;
- уплотнения грунтов оснований в выемках с использованием грунтоуплотнительной технике, армирования и других средств, если в природным сложении плотность грунтов меньше 98 % от максимального его значения;
- система водоотводных сооружений должна защищать земляное полотно от грунтовых поверхностных вод. Элементы этой системы должны иметь межремонтный срок, равный сроку межкапитального ремонта пути;
- все элементы земляного полотна должны обеспечивать экологическую безопасность, соответствовать требованиям транспортный эстетики, иметь устройства контроля их состояния в процессе строительства и эксплуатации скоростных железных дорог.

Земляного полотно должно удовлетворять следующим эксплуатационным требованиям:

-обеспечивать длительную эксплуатацию при пропуске современных и перспективных типов подвижного состава, для высокоскоростного движения поездов и расчетной грузонапряженности;

-до ведения высокоскоростного движения на линии должны быть устранены все имеющиеся дефекты и деформации земляного полотна;

-реконструкция земляного полотна должна выполняется на основе результатов инженерно-геологических, инженерно-гидрометеорологических изысканий. В трудных условиях дополнительно должны быть проведены гидрогеологические и другие виды изысканий, а также натурные обследования деформативных свойств грунтов основания.

Устойчивость откосов и несущая способность глинистых грунтов в подшпальном основании на границе раздела с накопленными балластными и дренирующими материалами определяется расчетом.

Коэффициент устойчивости откосов насыпей должен быть не менее 1,25 при расчетном значении естественной влажности глинистого грунта не менее 0,8WL , где WL – влажность на границе текучести. Удельное давление нагрузки от подвижного состава следует принимать в расчете равном 100 kPa/m.

На участках реконструкции и сооружения нового земляного полотно модуль деформации грунтов рабочей зоны земляного полотно определенный по методике [2] должен составлять не менее 65 мРа.

На участка устранения дефектов и деформацией земляного полотна, его реконструкции в связи с положением плана пути:

Ширина основной площадке на реконструируемой линии принимается из расчетов междупутья 4.1м; при строительстве новой двухпутной линии и строительстве вторых путей ширина основной площадке принимается из расчета междупутья не менее 4.5м.

В местах с недостаточной шириной основной площадки предусматриваются мероприятия по её уширению.

Несущую способность земляного полотна, особенно для скоростных и высокоскоростных магистралей, следует определять в динамической постановке, что в несколько раз увеличивает трудоемкость расчетных работ.

Проектирование переустройства земляного полотна должно осуществляться не только по данным о его несущей способность, но и с обязательным учетов дефектов и деформаций полотна, сведения о которых существуют в дистанциях пути или выявляются в процессе тщательного инженерно-геологического обследования его рабочей зоны.

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DEVELOPMENT OF METHODS TO INCREASE THE EFFICIENCY OF RAILWAY OPERATION

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ANNOTATION. *The object of research: the technology of optimizing the content of the path. The problem to be solved: When developing solutions to optimize the decision-making system for the content of the upper structure of the path, methods of management theory, system analysis, and optimal management methodology were used.*

Innovative technological product: combined transportation that can interact with similar networks of foreign countries. The scope of application of the innovative technological product: the formation and effective functioning of the railway transport complex, the improvement of tariff policy, the justification of promising parameters of the transportation process and its technical means, the creation of advanced technologies, the choice of a rational structure of the transport network, the formation of transport corridors, the development of fundamentally new management systems.

KEYWORDS *railway transport facilities, track maintenance diagnostic methods, tracks railway technical control system.*

АННОТАЦИЯ. *Объект исследования: технология оптимизации содержания пути. Решаемая задача: При разработке решений по оптимизации системы принятия решений по содержанию верхнего строения пути использовались методы теории управления, системного анализа, методологии оптимального управления.*

Инновационный технологический продукт: комбинированные перевозки, которые могут взаимодействовать с аналогичными сетями зарубежных стран. Сфера применения инновационного технологического продукта: формирование и эффективное функционирование железнодорожно-транспортного комплекса, совершенствование тарифной политики, обоснование перспективных параметров перевозочного процесса и его технических средств, создание передовых технологий, выбор рациональной структуры транспортной сети, формирование транспортных коридоров, разработка принципиально новых систем управления.

КЛЮЧЕВЫЕ СЛОВА *железнодорожный транспорт средства, технического обслуживания путей методы диагностики, пути система технического контроля железнодорожных путей.*

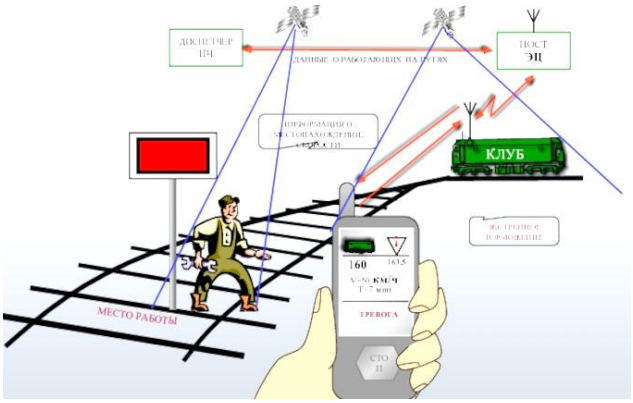
INTRODUCTION The object of the study is the technology of optimizing the maintenance of railway tracks. Description of the problem railway track maintenance is the production activity of enterprises and divisions of the railway industry, one of the main branches of railway transport, aimed at ensuring the technical condition of the track and its structures; ensures uninterrupted and safe movement of trains at a certain speed. This is achieved by periodic repair and daily maintenance of the railway within the limits of compliance with established norms and acceptable indicators of the technical condition of the main mechanisms, timely identification and prevention of breakdowns and malfunctions, elimination of the causes of these malfunctions based on systematic monitoring and inspection of tracks, as well as modernization and reconstruction of the railway, man-made structures, earthworks, etc. At the same time, the elements of the railway track must ensure the safe and unhindered movement of the train at the speed set for this section. A

fairly large number of studies have been conducted on the problems of improving and developing the track economy of industrial railway transport.

The proposed method of solving the problem The described problem can be solved if methods are developed to improve the efficiency of the maintenance system of railway lines of industrial enterprises by optimizing planning, complex mechanization and improving the organization of trips, as well as computerization of management to ensure their readiness with minimal costs.

MATERIALS AND METHODS. When developing solutions to optimize the decision-making system for the maintenance of the upper structure of the track, the methods of management theory, system analysis and optimal management methodology were applied. In order to develop functional and information models of the management track facilities, technologies for modeling complex systems were used, as well as design automation tools (case technologies, EF techniques) were developed for the design of automated Control systems. As well as methods of system analysis, management theory, and optimal management methods, new technologies were applied.

RESULT. Track facilities are a multifunctional complex, the main task of which is to perform all types of preventive maintenance and repairs on railways and structures to ensure stable and safe operation of railways. The main element of the track infrastructure is the railway, a set of technical structures and devices that are used mainly for the movement of trains and are designed to move trains at a fixed speed. These include a superstructure (rails, switches, substation), a rail base with mounting equipment and a filling area), a roadbed, anti-deformation drainage, protective and reinforced structures for a channel without lining in the drainage strip, non-removable track structures [3]. More than 50% of all fixed assets of railway transport are concentrated in the sphere. Currently, economic costs account for more than 30% of the company's total costs. The main goal of the track complex now is to reduce production costs with maximum capacity and maximum load capacity from the point of view of train safety.



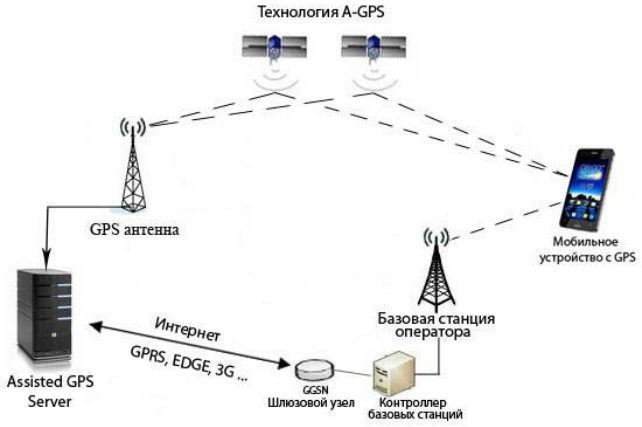
In this regard, the existing track control system should be based on advanced developments based on improving the design of the upper structure of the track, further mechanization and automation of work, and technologies for their implementation. Currently, the priority directions for the development of the road complex are [4]:

– increasing the long-term stability of the track through the use of improved structures and materials, the transition to the implementation of work with modern complexes of tracked vehicles;

– Optimization of repair technologies and current maintenance of the track and bringing the annual development of machine complexes to the level of their production capacity;

– Improved motivation and higher wages as new technologies are introduced and productivity increases. Cost reduction is directly related to the efficiency of production organization.

The use of resource-saving programs in the railway sector without increasing the technological indicators of production makes it possible to achieve a significant reduction in operating and labor costs, without providing the planned reduction in railway transport costs [5]. Currently, significant savings in the road fund can be achieved only through its formation with more efficient technical means, updating cost management methods, improving the operation of the enterprise and technological processes, including intensive (qualitative) factors to improve financial performance. The introduction of an upgraded (improved) path with a longer life cycle in high-load sections will significantly reduce costs. In general, this is the goal of the railway complex [6]. To ensure a long service life, it is necessary to use materials of the upper structure of the track, such as rails of world quality standards from companies such as Nippon Steel and Voestalpine [7]. A joint less track with rail loops of almost unlimited length, completely without bolts, including the presence of switches. Due to the use of a joint less track, the operating costs of its maintenance, fuel and electricity costs for locomotive traction are reduced, as well as the time between scheduled maintenance works is increased. Train safety is improved by reducing deficiencies and malfunctions of technical means.



Despite the high efficiency of use, there are a number of restrictions for its implementation, taking into account climatic conditions, a horseshoe curve, unmanageable soil [8]. The solution to the problem in the development of long–length welded rails in the state may be the expansion of laying polygons, including on horseshoe-shaped sections with a radius of less than 350-300 meters using railway sleepers with increased shear resistance with the replacement of crushed ballast timber; a robust spring-loaded rail and, in general, maintenance-free intermediate fasteners [9]. The optimal use of this type of structure is possible due to borrowing foreign experience and adapting it to our operating conditions. Updating the soil on high-speed and heavy sections by extracting crushed stone from denser rocks will reduce the cost of maintenance of the track. A purposeful increase in the bearing capacity of the main soil surface due to the laying of protective layers of the base will increase the operating intervals on high-speed sections of railway tracks [5]. Since the technical improvement of the track design increases its reliability, the number of equipment failures requiring immediate repair is reduced. When carrying out major repairs, reconstruction of the track and switches, it is necessary to use the most closed technology for significant distances between tracks [10]. In areas with high traffic, it is possible to use the technology of “night” traffic to repair tracks. To reduce the cost of routine maintenance of the

track, it is necessary to put into operation new types of fixed assets [7]. Updating productivity improvement methods and diagnostic methods will help to increase the productivity and economic efficiency of the track complex [11]. Due to subsequent changes in the technical and technological properties of railway diagnostic tools, it is necessary to change their quantitative indicator within the distance between the tracks and the cost of their use, while ensuring the maximum safety indicator of the transport process [12]. When developing a new cost management methodology as a result of technological changes in the travel economy, several important factors should be taken into account [13,14,15,16,17]:

– Coefficient of accounting for the cost of maintaining tracks;

– the coefficient of delay and decrease in the regional speed of trains during work.

Limitations of the study: theoretical issues of complex mechanization of the path are still unresolved. There is no concept of creating an automated control system as a basis for improving the management of the railway control system. An analysis of the degree of research on improving the effectiveness of technical control of railways has shown that there is no systematic approach and existing developments in the field of organization, optimization, individual standards for track repair or parameter models, technological requirements and operating conditions, in particular, are taken into account. There are no methods for diagnosing tracks, creating and optimizing a comprehensive plan for repair and track work, taking into account the condition of the tracks, as well as operational planning and management of their implementation. Thus, in order to further adapt railways to the trans-European railway network, it is necessary to: develop state measures of regulatory support for international activities; harmonize the regulatory framework in the field of railway transport in accordance with international legal norms; to ensure the technical and technological convergence of the mobile warehouse and the transport network of Ukraine with the European transport system; to bring technical, technological and environmental standards in line with European ones; to bring them into line with European standards by modernizing and reconstructing the main routes that can be included in the pan-European transport system; the railway information support system for industries is based on modern information technologies. To solve all these tasks, it is necessary to coordinate the actions of all structures that ensure the formation and effective use of transport corridors. In addition, here it is necessary to strengthen the regulatory role of the state.

CONCLUSION. Summarizing the above experiments, the following conclusions can be drawn:

1. The existing system of distribution of repair work by missed tonnage does not fully characterize the level of impact of rolling stock on the track.

2. The assessment of the actual condition of the route should be carried out not based on individual indicators, but based on the dynamics of processes obtained because of monitoring.

3. The track maintenance system must flexibly adapt to changing conditions, ensuring stable operation throughout its service life.

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ЗЕМЛЯНОЕ ПОЛОТНО КАК ГЕОТЕХНИЧЕСКАЯ СИСТЕМА И ФУНКЦИИ МОНИТОРИНГА

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Аннотация. *В данной статье приведены материалы по геотехнической системе земляного полотна и 5 уровней от А до Д. Описан мониторинг земляного полотна с результатами наблюдений, накопленных за предыдущие годы до его организации.*

Ключевые слова: *диагностика, земляное полотно, ПТС ЖДП, геотехническая система, мониторинг, АПБ.*

Железнодорожный путь, как известно, представляет из себя единую инженерную конструкцию, в которой верхнее строение и земляное полотно взаимосвязаны и работают совместно в различных эксплуатационных и погодно-климатических условиях. Таким образом, для приведения железнодорожного пути в работоспособное техническое состояние должны быть ликвидированы не только повреждения его верхнего строения, но и установлены, а в дальнейшем устранены их причины, которыми во многих случаях являются деформации земляного полотна. Однако такого комплексного подхода к диагностике железнодорожного пути до сих пор нет, поэтому в ряде случаев средства, затрачиваемые на ремонт и содержание пути, не дают должной отдачи [2].

Земляное полотно при системном подходе может быть рассмотрена как подсистема в природно-технической системе железнодорожный путь (ПТС ЖДП) (рис. 1), которая взаимодействует с другими подсистемами и, выполняя функцию фундамента в конструкции железнодорожного пути, обеспечивает стабильность положения верхнего строения пути в пространстве в течение заданного срока эксплуатации.

Геотехническая система земляное полотно (ГТС ЗП) объектов земляного полотна сети железных дорог представляется как иерархическая система, структурно построенная по принципу вложения подсистем более низкого уровня в подсистемы более высокого уровня (рис. 2), в которой может быть выделено 5 уровней от А до Д [1].

Рис. 1. Геотехническая система земляное полотно

Верхний уровень (мегауровень) представляет земляное полотно в пределах железной дороги как наиболее крупного структурного подразделения, являющегося центром по управлению функционированием системы. На уровне дороги осуществляется планирование работ по содержанию земляного полотна с учетом распределения инвестиций; ведется сбор, обработка, анализ и хранение информации; выполняется инженерная поддержка обследовательских и проектных работ.

Второй уровень (макроуровень) составляет подсистема земляного полотна в пределах одного направления дороги, характеризующегося примерно одинаковыми внешними для системы эксплуатационными параметрами нагрузок (грузонапряженность, скорость, нагрузки на ось и т.д.), и является однородной по предъявляемым к ней требованиям по уровню надежности. На этом уровне производится выделение основных направлений и малодеятельных участков.

Третий уровень (мезоуровень) представляют единичные объекты земляного полотна, на которые по принципу однотипности конструкции (насыпь, выемка, нулевое место и т.д.) делится земляное полотно направлений. Это основной уровень, обеспечивающий выполнение функциональной задачи земляного полотна, и уровень, на котором определяется надежность и производится управление.

Четвертый уровень (мини-уровень) составляют отдельные элементы единичного объекта земляного полотна (основная площадка, откосные части, ядро насыпи, основание, защитные и укрепительные сооружения и т.д.). Выделение данного уровня позволяет при управлении целенаправленно выделять слабые зоны, требующие усиления.

Пятый нижний уровень (микроуровень) выделяет в единичных объектах отдельные инженерно-геологические элементы (ИГЭ), что является характеристикой на уровне материала (грунта). Важным на данном уровне являются свойства материала, определяющие способность выполнения единичным объектом или его элементом возложенных на них функций. Они содержат механизмы и инструменты для комплексного анализа состояния земляного полотна и являются элементами новой концепции технического обеспечения земляного полотна [3].

Мониторинг земляного полотна на первой стадии начинается с функции оценки результатов наблюдений, накопленных за предыдущие годы до его организации. На первом же цикле при осуществлении этапа прогнозирования проводится разработка целевой программы мониторинга, с которой и начинается мониторинг в полном его смысле. В пределах дорог функции оценки и прогноза объединяются в единый аналитически— прогнозный блок (АПБ), выполнение которого осуществляется в дорожных центрах диагностики при Службах пути.

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MAIN TASKS OF ORGANISATION OF ENGINEERING SURVEYS OF TRANSPORT FACILITIES

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Annotation. *The article describes the main difficulties in the production of economic surveys, certification of separate technological design lines (TLD), improvement of the quality of the products produced.*

Key words: *Railway monitoring, design and survey complex monitoring, risk*

The process of carrying out organisational work to conduct complex engineering surveys for the design and construction of new railways or motorways or reconstruction of existing facilities is generally represented in the figure.

In recent years, in connection with the transition to market conditions of functioning, the organisation of surveys has undergone significant changes. Today there is no neutralised receipt and financing of separate orders, provision of overalls, equipment and transport vehicles. The solution of these issues depends entirely on the financial position of a particular design and survey organisation.

As a result of the analysis of the complex of measures on the organisation of engineering surveys, it is false to make a number of recommendations to improve the efficiency of decisions and, ultimately, to improve the quality and reduce the time of surveys.

Thus, one of the important and problematic stages is the formation of a portfolio of contracts with potential customers (see figure). For successful work of the designer at this stage it is necessary to:

- formation and accumulation of information base about customers;
- advertising and information propaganda of its products and potential with the use of modern opportunities, including at various exhibitions, via INTERNET and others;
- improvement of the quality of manufactured products;
- certification of separate technological design lines (TLD) of the products as a whole and of the enterprise-designer;
- improvement of negotiation experience.

For inclusion of applications in the work plan there should be a special scientifically grounded methodology on the basis of which the most promising and profitable objects could be unmistakably allocated. Special methods should be developed and on Formation of applications of the order of the head of the enterprise on the organisation of surveys in.1ya distribution:

- loading by departments;
- performers, as well as means of mechanisation and devices by titles and subdivisions.

Estimates of expenditures for surveys should be made on variants taking into account:

- different duration (if possible) of surveys and, as a consequence, : different number of employees;
- different reserves for the purchase of new equipment and technologies, devices, equipment and equipment.

It is also necessary to consider different models of the development (course) of the preparatory period:

- on the depth of study of available literary, archival and other materials;
- on the depth and accuracy of preliminary desk studies.

Obviously, as many alternative scenarios as possible should be played with expedition and party chiefs, including possible operational (day-to-day), tactical or strategic (principled) project decisions.

One of the most important problems of engineering surveys after orientation of the country's economy and construction industry to market conditions has become financing. Since the centralised financing has ceased to exist, the direct customer and designer have to solve this problem either individually, closely interacting with each other, or focusing on possible interested external investors or sponsors. Therefore, mutual trust, confidence in each other, reliability and financial solvency of partners, interest of the parties in observance of contractual obligations are necessary here.

However, it is not always up to the contracting parties. Often there are objective reasons that prevent the parties from fulfilling the contract. In addition, one of the parties may be dishonest. The project developer should be prepared for such a turn of events.

In order to minimise losses it is necessary to:

- forecast the situation as far as possible;

- competently draft contracts, for which the project organisation should have a qualified lawyer on its staff;

- be able to resolve (theoretically and practically) conflict situations, including those related to the implementation of offset schemes.

To increase responsibility for their decisions, it is possible, as an option, to develop job descriptions for all engineering and technical personnel of survey divisions, as well as for persons responsible for the organisation of engineering surveys at the levels.

The survey progress and deadlines can be monitored by means of network or time schedules, which are simple and accessible to any contractor.

There should be a reverse system of incentives for timely and high-quality performance of work, which may be long-term, i.e. depending on the length of time of stable performance of work with high quality, as well as linked to the service positions of performers.

In the period of transition to a market economy, the question of a new approach to economic research and long-term planning is acute. At present, Russian scientists have extensive experience in planning work, rich practice of producing various feasibility studies and assessments of the economic efficiency of projects. All this is necessary for railway construction. However the modern situation requires along with the above mentioned to take into account the new economic relations. It is necessary to use the methods of perspective planning and forecasting, to assess the demand for transport products, the state of competitiveness of different types of transport, to analyse the economic, financial stability and performance of railway transport.

Under the administrative-command system of management, the volume of railway transport work was determined from above: the volume of freight and passenger traffic was planned for a five-year or ten-year period, construction directions were set, and its cost was known, which made it possible to determine the economic efficiency of railway construction in advance. The whole methodology of economic research was based on these plans, for example, the determination of the volume of local freight traffic was based on the plan of national economy development. One of the main methods of planning the national economy was the balance. This method lay [1] and in the basis of optimal planning of freight flows, an important part of which was the attachment of suppliers to consumers, which is said in modern conditions is not necessary.

Today, the problem of studying the real needs of cargo owners in transport services and their consideration in the development of forecasts of any level is acute. In [2] two main interacting subjects of the transport market are defined - the transport system and the consumer of transport products - consignor and consignee. The main goal of the consumer is the maximum possible reduction of transportation costs, transport availability at any time, ensuring the safety of cargo, cargo delivery 'just in time'. The goal of the transport system is to win or maintain its position among competitors, to attract the largest number of cargoes.

Until now, for a number of reasons it was paid little attention, the efficiency of transport was assessed by such parameters as the fulfilment of plans for cargo turnover, reduction of transport costs, that is, only economic indicators were taken into account.[3].

The uncertainty of initial data and possible outcomes, which depend significantly on the state of the external environment, has a great impact on the decisions made in the process of economic research. The success of any enterprise in the market economy depends on the correctness and validity of the chosen methodology and taking into account the probability of unforeseen situations. Uncertainty in economic research today is associated with the lack of necessary and reliable information about the economic situation in the region of railway construction.

Conclusions

The main difficulty in economic surveys is the complex assessment of economic conditions, analysis of the changes taking place, and drawing up a comprehensive picture of the transport situation in a particular design area. Economic instability is characterised by the fact that no situation or market trend lasts too long, which explains the economic and probabilistic nature of railway transport, i.e., in one way or another, road construction is associated with risk. There may be a situation when the road is not fully loaded, not in demand or, on the contrary, when the capacity of the road will be insufficient to meet the needs of cargo owners. Such transport problems can be solved by analysing the results obtained in a game situation simulating possible contingencies.

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EVALUATION OF THE EFFECTIVENESS OF THE USE OF INNOVATIVE TRACK EQUIPMENT IN THE REPAIR AND MAINTENANCE OF RAILWAY TRACKS

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Annotation. *The article considers the issues of using innovative technology for the current maintenance and repair of a railway track. The KGT-4RS multifunctional machine was chosen as a modern track equipment. The versatility of this vehicle lies in the fact that it is capable of operating on a combined course (in particular, on railway and automobile), as well as performing various types of repair work by changing a large range of attachments. The paper presents the results of a comparative assessment of the use of KGT-4RS, the VPR-02 track machine and manual labor to perform the operation of tamping sleepers when straightening the path. It is noted that manual labor it allows the replacement of sleepers without closing the crossings, but is inefficient, while specialized machines perform a large amount of work, but it requires the closure of the crossings. To confirm the economic feasibility of using a new generation of technology KGT-4RS has developed a methodology for evaluating the economic efficiency of the use of innovative technology when performing various types of work on the current maintenance and repair of the track. As the main one The criterion for calculations is the value of the cost of a unit of travel work. According to the calculation results , it was found that the lining of sleepers in the amount of up to 10 pieces is economically advantageous to carry out manually, from 10 up to 38 sleepers are equipped with the KGT-4RS multifunctional machine, and over 38 sleepers are equipped with the VPR-02 track machine. The proposed methodology takes into account the current operational, annual and one-time costs of operation-It allows you to choose a cost-effective machine to perform certain tasks on the maintenance of the railway track.*

Keywords: *track equipment, KGT-4RS machine, economic efficiency, repair, railway track.*

In modern conditions, in order to increase the efficiency of the transport complex, the issue of creating a conditions that ensure the innovative development of high-tech machines and new technologies, which fully meets the main tasks defined by the Strategy for the Development of Railway Transport in the Russian Federation until 2030 [1]. The priority areas of innovative development of the transport complex and, in particular, the food industry of JSC "Russian Railways" include the introduction of innovative repair and maintenance technologies -for the maintenance of the railway track on road networks in order to achieve high efficiency of results with high quality of work and transportation safety. Of great importance for this purpose has recently been the use of modern innovative technology for the current maintenance and repair of railway tracks, in particular, combined running equipment (auto-mobile and railway), the main advantage of which is its multifunctionality. This quality of this technique is ensured by a design feature, pos-the will to install in a few minutes the necessary replacement equipment for performing various types of repair operations and maintenance of the track. Currently , various innovative combined-stroke machines are used in world practice for the repair and maintenance of railway tracks [2]: the DX160w excavator manufactured by the SouthKorean company Doosan Infracore, the A900CZWLironic excavator by Liebher (Switzerland), multifunctional Huddig 1160 and Huddig 1260 tires (Sweden), Komatsu PW160 backhoe loader manufactured by the Estonian company Ameerika Autoteeninduse oy, multifunctional universal loader excavators KGT- tronik, KGT/V, KGT-4RS manufactured by the company Geismar (France) and others. It is obvious that the innovative development of the transport complex requires significant financial resources, therefore , in order to increase the investment attractiveness of innovative projects in

this direction , it is necessary to solve the problem of reducing the cost of performing track work with functional safety and uninterrupted movement of trains, as well as the development of methods assessment of the economic efficiency of the use of innovative technology. This task is due to the fact that the standard methods and existing technologies for the current maintenance and repair of the railway track do not provide for the use of innovative machines with certain technical and operational characteristics, including technical performance, which determines the time of performance of certain track work. The use of existing track machines in existing technologies is justified by many theoretical research and practice have confirmed the completion of track work, while the inclusion of innovative technology in technological processes for the maintenance and repair of the track requires the determination and confirmation of the economic feasibility of its use for performing various types of work in those or other production conditions. Thus, the development of a methodology for assessing the economic efficiency and appropriateness of the use of innovative machines in performing various types of operations for the current maintenance and repair of the track taking into account production factors , it is an urgent and priority task for the track complex of the industry, without a solution which makes further innovative development of the company impossible. An assessment of the effectiveness of the application can be made only on the basis of comparing the economic results of using innovative machines and existing technologies and equipment used. To achieve this goal , possible technological processes for the maintenance and repair of the same roadway were analyzed. Regardless of the type Three main options for their implementation can be distinguished for the performed track repairs :

1) manual labor with the use of amechanized tool;

2) the use of specialized travel machines;

3) the use of multifunctional machines on a combined course.

Recently, the West Siberian Railway has been using a loader excavator on a combined course KGT-4RS (Fig. 1, a) to perform work on the current maintenance and repair of the railway track (Fig. 1, a), designed to perform excavation, lifting and loading and unloading operations, cutting vegetation, drilling wells, leveling and loosening the ballast layer, replacing and lining sleepers. This machine is made on a pneumatic- scaffolding track and is equipped with a railway track mounted on a running frame, which it ensures the installation of the machine on the railway track, self-propelled reverse movement and exit from the railway track. It is additionally equipped with a set of interchangeable working bodies for various purposes: a hydraulic rotor, a handle for front forks and a bucket, an arrow for parallel excavation, a load-lifting hook, an electromagnet with a built- in generator, a hydraulic hammer, a vertical drill, a brush cutter, a grass snare, modules for lining (see Fig 1, b) and the replacement of sleepers, etc. [6-8].

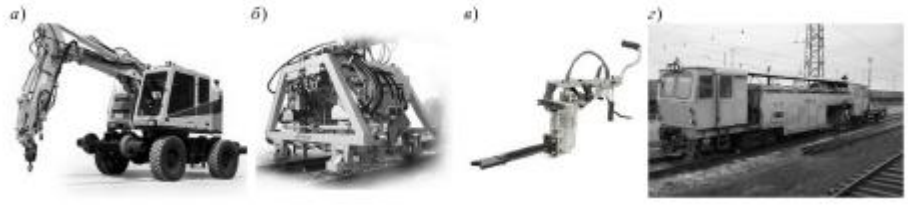

Fig. 1. Equipment used in the performance of work on lining sleepers: a – backhoe loader on a combined stroke KGT-4RS; b – hinged module for lining sleepers MB2T; c – manual electric tamper ESP-9; d – straightening-tamping-straightening machine VPR-02 The backhoe loader is characterized by simplicity , ease of operation, minimal maintenance costs and high reliability.

At the same time, the large technical capabilities and mobility of the KGT-4RS contribute to the economically unjustified use of this machine in various operations. Thus, the main purpose of the calculation was to determine the boundaries of the cost –effective use of the new KGT-4RS backhoe loader machine when performing an operation on lining of sleepers when straightening the path. In accordance with the developed methodology, the assessment of the effectiveness of the use of this machine on the specified operation was carried out by comparison of the cost of lining one sleeper with a KGT-4RS machine with a similar indicator when using manual labor and a specialized track machine. Manual tamping of sleepers is used for continuous and priority track straightening, carried out selectively in the time intervals between trains and requiring frequent folding and deployment of work to pass through-and the brigade's transition from one place to another. The calculation considered the technology manual tamping of sleepers, performed by four electric tampers (see Fig. 2, c) by a crew of seven track fitters. The VPR-02 straightening and straightening machine was considered as a specialized track machine for performing the operation of straightening and lining the railway track (see Fig. 2, d). This track machine is used for straightening the railway track in the longitudinal and transverse profile and in plan, as well as for seals (lining) of the ballast [9]. The following conditions are accepted as general initial data for the calculation:

- distance from the base to the place of work 20 km;
- front of work – lining from 1 to 100 sleepers;
- reinforced concrete sleepers;
- crushed stone ballast;

Ballast contamination up to 15%. The indie-visual characteristics of the evaluated technologies according to [7, 10] are presented in the table. Thus, the proposed methodology makes it possible to assess the economic efficiency of using a particular technology of track work at a minimum cost per unit of work, as well as to choose the most economically feasible machine for performing specific work in production conditions (depending on the distance of the sections of the track and the required amount of work for various types of operations the current maintenance and repair of the railway).

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SELECTION OF A RAILWAY DIRECTION OPTION AS A MULTI-CRITERIA DECISION-MAKING PROBLEM

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Abstract: *The article deals with the main indicators of efficiency of project solution variants; the principles of variability, which provide the possibility of comparative evaluation of variants, the principles of stages in decision-making.*

Key words: *Choice of variant, modified, integral effect, efficiency of variants, project decision.*

Selection of the railway direction variant and its parameters is carried out at the early stages of the design preparation of construction. The comparison of options and decision-making on further development of one of the options is carried out according to the following scheme [1].

At first, the most effective variant is selected according to the indicators of comparative economic efficiency, which are: comparative integral effect, reduced (modified - in case of taking into account the share of tax deductions from profit) construction and operating costs, payback period of additional investments, efficiency coefficient of additional investments [1], [2].

Then the selected variant is evaluated by the indicators of overall economic efficiency, the main of which are: net discounted income (integral effect of investments), payback period of investments, profitability index (index of profitability of investments) and internal rate of return (rate of return on investments).

If the selected variant meets the requirements of the overall economic efficiency of investments and provides the rate of return on investments and the investment return period required by the investor, the commercial efficiency indicators for this variant are evaluated by determining the real money flows on investment, operational and financial activities of the enterprise (projected railway) and calculating the current and accumulative balance, with positive values of which in any time interval the selected variant is recognised. If the balance is negative, the possibility of attracting additional funds by the investor is considered [1], [2].

In the scheme considered, the main indicators of the effectiveness of the project solution options are cost (monetary), which is generally recognised, despite the known shortcomings of these indicators [2].

The principle of variability is applied in railway design, which provides the possibility of comparative (competitive) evaluation of options. The fundamental difference between the variants is explained by the different objectives set by the designer in a particular task (and these objectives are most often multidirectional).

The optimality principle (decisive rule, target function), on the basis of which an option is chosen, can be specified in advance (operations research problem), but can be formed during the solution of this particular problem (decision-making problem) on the basis of the preference structure of the main decision maker (LPR), for example, the chief engineer of the project, the head of the survey and design department or the director of the design and survey institute.

The principle of stages (stages) is also applied in railway design, which ensures the saving of resources (time, labour, energy, money) required for the creation of design and estimate documentation.

The choice of the variant of the direction and parameters of the projected railway is made at the pre-project stages: preliminary at the 1st stage - when determining the investment goal with the development of a petition (declaration) of intent and then finally at the 2nd stage - when justifying the investment in construction with the receipt of the act of selection of the land plot for construction [3].

The decision is made under conditions of uncertainty, the reasons for which are:

- complexity and labour-intensiveness in determining the exact values of a number of indicators, caused by the small amount of resources allocated for survey and design purposes;

- necessity of forecasting changes in the conditions of the problem to be solved (the size of cargo turnover, cost indicators, environmental, social, political factors, etc.) due to a significant time lag - from the point of decision-making on the choice of the variant to the point when the constructed railway reaches the level of 70% of the design capacity, such a time period can be from 9 to 18 years [2]);

- uniqueness, inherent to some extent in all designed railways that are complex natural and technical systems (especially pioneer railways designed in little-developed and little-studied areas).

Various methods have been developed to account for uncertainty when comparing design options, e.g. [1], [2], [4].

Since the task of choosing a variant is solved in conditions of uncertainty, therefore, the probability increases that at the initial comparison on the named indicators of comparative economic efficiency the variants can be equally valuable within the accuracy of technical and economic calculations (for example, at the pre-project stages it is proposed to consider as equivalent the variants with relative difference on indicators within 10... 15 % [2]. 15 % [2]).

Consequently, it is very likely that the choice of the direction of the projected railway will have to be made with the involvement of additional indicators, the objective value substitutions between which are unknown, and therefore, their weight scaling) coefficients are also unknown. The methods of solving the above problems have been considered in many works, for example [2], [4], [6]. In the author's opinion, we should give preference to axiomatic decomposition methods of utility theory, which allow making decisions under conditions of certainty [4], uncertainty [7] and in a fuzzy environment [8]. In this case, the choice should be made in favour of the option with the highest value of utility (value, expected utility, fuzzy utility). Utility, acting as an additional complex indicator of the comparative effectiveness of options, will help to solve the problem and choose the best (for the preference structure of a particular LPR) variant of the project solution.

Utility reflects the preferences of the LPR in a particular task of multicriteria decision-making and, therefore, by its nature is a qualitative indicator, but it is expressed as a number, which allows us to confidently place the compared options on the numerical axis (in a fuzzy environment with the use of ranking indices). The usefulness of the variant obtained as a result of solving the problem is, of course, a subjective value and, it would seem, for this reason it does not suit railway designers much. But the usefulness, as well as subjective assessment of the probability of occurrence of any event, given by an experienced expert, is not an arbitrary (random) value. Utility reflects the objective value of preference: the experienced designer, which, although it can not at this stage of science development can not be measured directly and which has no generally recognised physical scale for measurement, nevertheless, the criterion of utility has an objective nature.

Conclusions

Thus, the theory of utility can be recommended for decision making in multi-criteria railway design problems under certainty, uncertainty and in a fuzzy environment when the criteria are expressed qualitatively (linguistically).

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ELEMENTS OF MODERNISM IN DAZAI OSAMU'S NOVEL "THE SETTING SUN"

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Abstract: *This article examines the modernist trends in the novel "The Setting Sun" by the Japanese modernist writer Dazai Osamu.*

Dazai Osamu is one of the greatest writers of the 20th century. His work cannot be attributed to any particular genre. Many call him a classic of the "novel about himself" ("watakushi-sesetsu"), others talk about his proximity to romanticism, but despite the fact that both are undoubtedly present in his work, it is difficult to fit Osamu Dazai's prose into the narrow framework of one genre.

The Setting Sun is one of Dazai Osamu's novels. Here the author shows the decline of an aristocratic family in the first post-war years, expressing fear of the impending storm and warning that the revolution is hostile to beauty and humanity.

Keywords: *The twentieth century, the novel "The Setting Sun", "existentialism", Dazai Osamu, "The Cherry Orchard", Meiji, Japan, the war, "a novel about myself" ("watakushi-sesetsu").*

The beginning of the twentieth century in many countries was marked by tragic political upheavals, the development of society in all 245 spheres of its life, and so rapid that many could not adapt to the changes in any way, so that gradually the entire world community lost morale. Japan embarked on a particularly active development path with the onset of the Meiji Restoration in the second half of the nineteenth century and by the first decade of the twentieth century had become an influential state at the stage of transition from the feudal system to the capitalist one. Feudal traditions have been developing in Japan for many centuries, and their almost instantaneous destruction was followed by the collapse of the people's faith in the bright future of the country. The Japanese had no idea what to expect from the next day: political parties arose one after another, workers and students did not stop striking, part of society fought to preserve the feudal system, some advocated the ideals of Marxism, but there were always those who were simply tired of wars and coups. At this difficult time, on June 19, 1909, in the city of Kanagi, Aomori Prefecture, Dazai Osamu was born, who entered the history of Japanese literature as one of its most tragic figures. The real name of the writer – Tsushima Shuji is one of the greatest writers of the 20th century. His work cannot be attributed to any particular genre. Many call him a classic of the "novel about himself" ("watakushi-sesetsu"), others talk about his proximity to romanticism, but despite the fact that both are undoubtedly present in his work, it is difficult to fit Osamu Dazai's prose into the narrow framework of one genre [1-9].

After the war, it was a difficult time for the aristocracy. Dazai's family became impoverished, and the abrupt change in the situation and lifestyle left a deep mark on the writer's soul. This is how the idea of the novel "The Setting Sun" (1947) appeared, about which the writer himself said: "I'm going to write a masterpiece. A great masterpiece. I intend to write the Japanese "Cherry Orchard". About the tragedy of the bankruptcy of an aristocrat. I've already decided on the name. It will be "Sunset", which means "disappearing sun".

Ibuse Masuji introduced the then-novice writer to Western literature: he advised Dazai to read Pushkin in Japanese translation. He read Eugene Onegin and was delighted, after which he became interested in Russian literature: he studied Gogol, Dostoevsky, Tolstoy and Chekhov, whose stories he especially loved. In the essay "The Tsugaru and Chekhov District" (1946), he wrote: "I read a lot, but I was most interested in Chekhov's plays. The theme of most of Chekhov's plays is provincial life.

It began to seem to me that the current life in the north of Japan is very similar to life in Chekhov's plays." Thus, having seen the similarity of the problems between Chekhov's works and the state of modern Japan, Dazai chose The Cherry Orchard as the basis for his novel.

Osama Dazai and Chekhov are chosen by two aristocratic families in a period of decline as the object of their observation. Having identified the formal similarity between the two works, one can ask how exactly the authors represent the aristocracy as a class, how they reflect the process of its decline and what they consider the causes of its extinction.

The main characters of the work are Kazuko, who speaks as a narrator, her brother Naoji, their mother, the last of the aristocrats, and the writer Uehara Jiro. All of them are experiencing deep depression, suffering from the effects of the war.

弟(おとうと)　の直治(なおはる)は大学(だいがく)の中途(ちゅうと)で召集(しょうしゅう)され、南方(なんぽう)の島(しま)へ行(い)ったのだが、消息(しょうそく)が絶(た)えてしまって、終戦(しゅうせん)になっても行先(いきさき)が不明(ふめい)で、お母さまは、もう直治(なおはる)には逢(あ)えないと覚悟(かくご)している

"Naoji was taken into the army directly from the university and sent somewhere to the south, there were no letters from him, even after the end of the war we did not learn anything about him, he was listed as missing."

During his lifetime, Naoji caused a lot of trouble for his family

直治(なおはる)　は高等学校(こうとうがっこう)にはいった頃(ころ)から、いやに文学(ぶんがく)にこって、ほとんど不良少年(ふりょうしょうねん)みたいな生活(せいかつ)をはじめて、どれだけお母さまに御苦労(ごくろう)をかけたか、わからないのだ

In the image of Uehara, the writer also brings himself out, showing a man who is "on the way to death", putting forward nihilistic ideas.

"I don't want to tell you empty platitudes: "stop drinking, think about your own health" or "I wish you a long life and creative success. I would not be surprised if the people of the future would thank you not only for your creative successes, but for the fact that you managed to remain faithful to your dissolute life at the cost of incredible efforts." An unrecognizable creature dying of tuberculosis finds itself in front of itself [10-15].

戦争(せんそう)の前(まえ)も、戦争中(せんそうちゅう)も、私(わたし)たちはそのとおりに思(おも)い込(こ)んでいたのだが、敗戦後(はいせんご)、私(わたし)たちは世間(せけん)のおとなを信頼(しんらい)しなくなって、何(なん)でもあのひとたちの言(い)う事(こと)の反対(はんたい)のほうに本当(ほんとう)の生(い)きる道(みち)があるような気(き)がして来(き)て、革命(かくめい)も恋(こい)も、実(じつ)はこの世(よ)で最(もっと)もよくて、おいしい事(こと)で、あまりいい事(こと)だから、おとなのひとたぶどう うそちは意地(いじ)わるく私(わたし)たちに青(あお)い葡萄(ぶどう)だと嘘(うそ)ついて教(おし)えていたのに違(ちが)いないと思(おも)

"Sacrifice. A victim of the era and changing morals. Both you and I are victims. Kazuko, the only one who remains alive, is also aware of herself as a victim, but at the same time she has demonic traits.

The new life that Kazuko carries within her forces her to reject the past, abandon the present and look boldly into the future, humbly believing that her destiny is to overcome.

けれども私(わたし)は、これまでの第一回戦(だいいちかいせん)では、古(ふる)い道徳(どうとく)をわずかながら押(お)しのけ得(え)たと思(おも)っています。そうして、こん

どは、生れる子(こ)共(とも)に、第二回戦(だいにかいせん)、第三回戦(だいさんかいせん)をたたかうつもりでいるのです。

"... I believe that in my first battle I managed to win, albeit a small one, but still a victory over the old morality. And I still have many new victories ahead of me, I will win them together with my child. In women's optimism, in the possibilities of creativity, Dazai suggests seeing the resolution of the conflict between the individual and society, love and ideology. Kazuko interprets the course of history and its goals as a condition for the reproduction of all life on earth in the unity of the spiritual and carnal. The novel gives the impression of a "literature of defeat", the characters of which are depicted as victims of their time, but Dazai poetizes this defeat, saying: "Victims are the most beautiful thing in this world" In the image of Uehara, Dazai reveals the isolated consciousness of a person who is isolated from society, vegetating within the boundaries of his own extremity. He passively gives himself up to the flow of events, and he is no longer capable of deep feelings. The union of Kazuko and Uehara was realized at a turning point in time, when the new Japan was not yet born, and the old one had already died, and it looks like another caricature of the writer on the events of the post−war era - chaos and devastation reigning on earth and in the souls of people. **Conclusion.** Dazai created a multifaceted work, the peculiar structure of which includes Naoji's diary and his suicide note, as well as Kazuko's letters to Uehara. The characters in this novel are hypostases of his own personality: in the image of Naoji, the idea of self-destruction that possessed him from a young age finds expression, in Kazuko, the communist ideals that had such a strong influence on him in his youth are reflected, in the image of Uehara - fatigue and impotence that seized him in the last years of his life. The psychological analysis of feelings, relationships, and experiences is carried out with the utmost sincerity, and the picture of suffering reaches convincing completeness. In the novel The Setting Sun, Dazai shows the sunset of an aristocratic family in the early postwar years, expressing fear of an impending storm and warning that the revolution is hostile to beauty and humanity. His works are imbued with a mood of despair, rejection of social ideals. In Dazai's work, Japanese youth found an image of their youth, ruined by the war.

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RAIL LAYING FOR HIGH-SPEED TRAIN MOVEMENTS

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Abstract: *The paper deals with a fluoroplastic under-rail gasket containing a base with a flat bearing surface in contact with the rail base, a flat inner bearing surface on high-speed traffic sections.*

Key words: *track structure, earth bed, under-rail lining, fluoroplastic under-rail lining, ballast prism, fastenings, high-speed train traffic.*

A railway track is a complex engineering system that includes various elements such as rails, sleepers, fastenings, ballast layer, and subgrade. The performance of each of them as a whole and separately determines the reliability of the track and the safety of train traffic [1, 2, 3, 4]. Reducing maintenance costs of railway track structure has significantly increased the volume of both passenger and freight traffic in the world. The more intensive the traffic and the greater the tonnage transported on a section of track, the earlier the deterioration of track components occurs. The right measures to ensure long-term cost reductions and extend the service life of the rails help to significantly reduce the costs of track maintenance. The long-term utilisation of a track section depends crucially on the condition of the track. Special attention is paid to the most stressed components: ballast, sleepers and under-rail pads.

With regard to the ultimate stresses, it can be said that only the values of the ultimate edge stresses in the rails and the allowable stresses under the pads on the sleeper, determined by the strength of the rail steel and the strength of the sleeper material, respectively, really exist. For the strength of the ballast layer, there are only estimated criteria [4].

Each of the elements of the track structure has its own task and requirements, i.e. the reliable operation of each element affects the operation of other elements as well. One of such elements is the under-rail lining.

Under-rail spacer is a rubber shock absorber for rail joints of the railway subgrade, installed on reinforced concrete or wooden sleepers. The gasket makes it possible to solve the following tasks: protection of the track structure, improvement of the rail track position quality and reduction of vibrations not only on the rail track but also in switches. The railway gasket is installed on wooden and reinforced concrete sleepers and serves for attaching the rail to the concrete base.

Under-rail gaskets are safely used for railway track due to their excellent parameters - stability, durability and efficiency in operation. The gasket is characterised by its excellent mechanical properties. The gaskets distribute the load from the railway train evenly into the underlying soil. With their high elasticity, these pads can be a cost-effective alternative to mats under crushed stone ballast. Crushed stone is a weak track component and is subjected to continuous wear and tear. Dynamic loads result in rubbing and crushing. This leads to changes in the position of the railway subgrade. The track needs to be repaired by piling crushed stone under the sleepers. The laying of spacers will slow down this process.

Under-rail spacers are made of at least two layers of elastic material, consisting of rubber and rubber cord, in the form of a rectangular plate, the upper and lower planes being fluted. The layers are made dissimilar and laid at an angle to each other. Gaskets, which consist of several layers, combine the characteristics of dissimilar materials and are suitable for operation in a wide range of temperatures and external loads. The corrugations are transverse grooves with a square or trapezoidal cross-section.

The under-rail gasket contains a rail base and a relief inner bearing surface in contact with the sleeper. On the inner bearing surface of the gasket there is a recess in which cylindrical and rectangular protrusions with rounded ends are located. Cylindrical protrusions are located on the periphery of the recess on the shoulder side, and rectangular protrusions are located symmetrically with respect to the axes of the gasket and evenly across the recess area.

The service characteristics and reliable operation of rail fasteners on reinforced concrete subrail bases depend to a large extent on the shock absorber pads used in their construction. In some types of couplings both under-rail and over-rail pads are used, but couplings with only under-rail pads are becoming more and more common.

Irrespective of the type of coupling, the role of spacers is extremely important in ensuring the serviceability of the couplings. Their main functional purpose is to ensure the stability of the track characteristics between scheduled repairs. In addition, spacers on railway sleepers provide resistance to rail displacement, provide electrical insulation and reduce dynamic loads. The working capacity of gaskets should be provided in the temperature range -600C + 600C. [5]. Most elastomeric polymeric materials in this temperature range undergo structural changes that affect the performance of the material and the gasket as a whole. Therefore, to ensure the functional suitability of gaskets, it is necessary to carefully select the material from which they are made and their design. This is of particular importance in the transition from conventional to loaded high-speed railway tracks with speeds of at least 160 km/h, where dynamic loads during train movement increase significantly.

In modern times this important element has insufficient durability, the service life of gaskets is much shorter than the service life of the rail. In this connection there is a necessity of replacement periodically between overhauls of railway earth bed. The limited life of gaskets used on low and medium-speed track casts doubt on the probability of their use on lines with high loads and speeds. The performance of the gaskets is determined by the material used for production and design.

We offer under-rail spacers in thicknesses from 5 mm to 8 mm. The gaskets are made of fluoroplastic material.

The proposed under-rail gasket is to increase the operational reliability of the under-rail gasket at its operation in the structures of fastenings both on lines with mixed traffic, including heavy traffic and on high-speed and high-speed routes.

The proposed design and technical solution provides not only improvement of elastic-deformation properties of gaskets due to the original design, but also guarantees fast elastic recovery in a wide temperature range. The proposed technical solution is new and is not a direct consequence of known technical solutions in the field of structures of railway track upper structure fasteners.

Under-rail gasket made of fluoroplastic is technically easy to implement, and its practical application makes it possible to solve the problems associated with increasing the operational reliability of rail fastenings when they are used both in high-speed and high-speed traffic and on lines with mixed traffic, including heavy-weight traffic.

Conclusions

Under-rail gasket made of fluoroplastic, containing a base with a flat bearing surface in contact with the base of the rail, flat inner bearing surface, provides resistance to longitudinal and transverse movements of the rail during operation, long service life in all weather conditions, and also has high indicators of transmission of vibration load and vibrations from the rolling stock on the sections of high-speed traffic.

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STRENGTHENING OF THE RAILWAY TRACK BASE FOR HIGH-SPEED TRAIN TRAFFIC

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Abstract: *The article considers the strengthening of railway track foundation in unbound soils by pile driving at an angle, which provides the overall stability of the earth bed from the impact of rolling stock during high-speed train traffic.*

Key words*: earth bed, high-speed train traffic, bases, ballast prism, track structure, sandy soil.Strengthening the base of the railway track in high-speed train traffic.*

When converting existing railways, designing and constructing new ones for high-speed traffic, a whole range of technical and economic problems must be solved. These are, first of all, the issues of train traffic safety related to the increasing forces of interaction between the track and rolling stock, increasing vibration, more intensive accumulation of residual deformations, decreasing service life of the main elements of the track structure, increasing the volume of maintenance and repair work [1, 2, 3, 4].

Construction and operation of railway lines in desert zones consisting of sand dunes is a very difficult task, and the lack of coarse and medium-grained sands in this area, as well as the lack of quality material in the form of cohesive or solid soils for the construction of railway earthwork and ballast layer makes the task even more difficult, and the transportation of these materials from other places leads to a significant increase in the estimated cost of construction. To solve these problems in the construction and operation of railway lines built in desert conditions, it is necessary to determine the factors affecting the bearing capacity of the ballast layer, eliminate them, and develop design and technological solutions that ensure stable and reliable operation of the railway track.

Given that more than 30% of the territory of the Republic of Uzbekistan is occupied by territories with mobile sands, this causes serious problems in the organisation of transport links between the regions of the country and its improvement. In particular, by determining the factors that influence the load capacity of the ballast layer, as well as their elimination, the stable and reliable operation of railway lines is ensured [5].

In the past, deformation control measures were mainly traditional soil replacement, vibration compaction, stabilisation by increasing the thickness of ballast under the sleeper and increasing the shoulder of the ballast prism. However, the use of traditional reinforcement methods is not always effective and is costly and time consuming. In fact, complete replacement of the soil in problem areas requires its excavation, removal and replacement with high-quality coarse- and medium-grained sands. During the works it is necessary to reinforce the slopes with shields to eliminate scree. Besides it is necessary to put into temporary operation the second track for the period of reconstruction, or to use a large number of vehicles for removal of old soil, which in itself increases the cost of reconstruction of the earth bed [6].

The newly constructed Bukhara-Misken railway line has a sandy subgrade. Therefore, let us consider in what ways this subgrade can be strengthened under operational conditions. What structural solution can be adopted to prevent deformations that may occur in the subgrade when the railway subgrade soil is sandy during operation.

Foundations can be strengthened by means of soil compaction, various injection methods, as well as by means of direct electric current and thermal methods.

Sandy soils are reinforced by compaction and various chemical injection methods. The use of the latter is based on the higher values of the filtration coefficient of sands than of clay soils.

Deep compaction with soil piles. Deep soil compaction can be performed with the help of soil piles. The essence of this method is the arrangement of wells at a certain distance from each other, which are filled with compacted soil. For the formation of wells, methods based on the displacement of natural soil from the volume occupied by the well are used. As a result, the soil between the piles is compacted. The bearing capacity of the base of the soil piles, in which the soil is brought to the required density.

Sand piles are a type of soil piles, the technology of which ensures the combination of the pipe extraction and pile construction processes. Sand piles are used to compact water-saturated loose sandy soils, fine and dusty sands, sandy soils with loam, clay or silt interlayers. The peculiarity of sand piles in water-saturated soils is that they work as vertical drains, accelerating the process of compaction of such soils.

The soil piles are staggered so that the centres of the adjacent piles form an equilateral triangle. This arrangement achieves the greatest compaction effect. The distances between the pile axes are selected to obtain the required density of the soil between the piles.

Conclusions

We offer pile driving at an angle - this contributes to a more uniform distribution of stresses in the subgrade soil and transfer part of the vertical components to the subgrade soil, which ensures the overall stability of the subgrade against the impact of rolling stock during high-speed train traffic.

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ОСНОВНЫЕ ТРЕБОВАНИЯ К УСИЛЕНИЮ ЗЕМЛЯНОГО ПОЛОТНА ЖЕЛЕЗНЫХ ДОРОГ

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Аннотация. *В данной статье приведены материалы по усилению земляного полотна. Описаны работы по усилению основной площадки земляного полотна, дефекты и деформации земляного полотна.*

Ключевые слова: *диагностика, земляное полотно, усиление, основная площадка, мониторинг, деформации.*

Земляное полотно – наиболее ответственный элемент железнодорожного пути, его несущая конструкция. Его можно считать, как бы фундаментом верхнего строения. От надежности земляного полотна зависят техническая скорость движения поездов и разрешаемая статическая нагрузка на рельсы, передаваемая от колесных пар вагонов, а через них масса поезда, провозная и пропускная способность линий [3]. Эксплуатационные наблюдения, в которые входят надзор за состоянием земляного полотна и изучение причин появлений повреждений, устанавливаемых на основе осмотров, которые являются средством, позволяющим оценивать текущее состояние. Такие наблюдения включают в себя систематический надзор, текущие и периодические осмотры, специальные обследования и наблюдения и т.д. Эксплуатационные наблюдения в основном осуществляются работниками дистанции пути, использующими лишь простейшие приборы и приспособления [2]. Усиление земляного полотна проводится в рамках выполнения капитальных ремонтов земляного полотна и железнодорожного пути. При этом такие работы, как усиление основной площадки, прилегающих к ней водоотводов, а также уширение основной площадки и уположение откосов, не требующие больших объемов, проводят при ремонтах пути, а усиление сложных индивидуальных объектов земляного полотна и полный ремонт водоотводных и защитных сооружений выполняют по программе ремонта земляного полотна, которая осуществляется по отдельным проектам и сметам, как правило, за год до производства ремонтно-путевых работ [1]. Работы по усилению основной площадки земляного полотна должны проектироваться во всех местах активного развития балластных углублений, балластных выплесков, просадок и пучин, числящихся в учетных формах ПУ-9 и ПУ-10. Исходными данными для проектирования таких работ должны служить материалы сплошного инструментального обследования основной площадки земляного полотна, водоотводов (кюветы, лотки, канавы), проводимого перед началом работ с выявлением их очертания и глубины расположения, определения наличия защитного подбалластного слоя, балластных шлейфов, размеров, сложения и загрязненности балластной призмы. Обследование выполняется с применением как непосредственного опробования (бурение, шурфование), так и геофизических методов (георадиолокация, электрозондирование) с анализом пути по лентам путеизмерительного вагона и проходам нагрузочного агрегата. При проектировании работ по усилению основной площадки земляного полотна применяются технические решения по повышению несущей способности земляного полотна.

Ширина основной площадки земляного полотна после усиления должна отвечать условиям размещения типовой балластной призмы и наличию обочин не менее 0,5 м, которые должны быть срезаны до низа балластной призмы. Уширение земляного полотна поверху следует назначать при расстоянии от оси пути до бровки менее 3,3 м. Вопрос об уширении основной площадки земляного полотна должен решаться в комплексе с принимаемыми решениями по ее стабилизации на основе технико-экономических расчетов и сравнения вариантов.

Уположение откосов насыпей необходимо предусматривать при крутизне откосов более 1:1,5, а откосов выемок - более 1:1,75 (при стабильных откосах выемок допускается их крутизна не более 1:1,5). При этом на путях 1-3-го классов должно предусматриваться устранение всех завышений крутизны откосов и срезка или закрепление балластных шлейфов на откосах насыпей высотой более 6 м. При более низких насыпях закрепление шлейфов и уположение откосов, как правило, следует производить досыпкой материала. Устранение завышенной крутизны откосов и ликвидация или закрепление балластных шлейфов решается в комплексе с обеспечением нормальной ширины основной площадки земляного полотна. В случае небольших объемов земляных работ и отсутствия необходимости применения специальных конструктивных решений (армогрунтовые сооружения, конструкции из габионов, контрбанкеты, подпорные стены и т.д.) работы выполняются при капитальных ремонтах пути. В иных случаях они производятся при капитальном ремонте земляного полотна.

На путях 1-го и 2-го классов должны быть выполнены работы по стабилизации всех деформирующихся и неустойчивых мест земляного полотна с размывами, сплывами и оползанием откосов; на путях 3-го класса — всех мест, имевших признаки деформаций в период после предыдущего капитального ремонта пути; на путях 4-го и 5-го классов — активно деформирующихся мест. На работы по устранению дефектов и деформаций земляного полотна, которые выполняются в составе капитального ремонта земляного полотна, составляются отдельные проекты и сметы. Проводятся работы по противодеформационным мероприятиям на участках со сложными инженерно-геологическими условиями (оползневые косогоры, закарстованные, замерзлоченные, заторфованные и слабые основания и др.), а также ремонт или замена отдельных противодеформационных конструкций и устройств в объемах, требуемых для их нормальной работы в течение периода между усиленными капитальными или капитальными ремонтами пути.

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STRUCTURAL FEATURES IN DAZAI OSAMU'S NOVEL "LOST"

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Annotation. *This article examines the compositional features of the novel "Lost" by the Japanese modernist writer Dazai Osamu.*

Dazai Osamu is one of the greatest writers of the 20th century. His work cannot be attributed to any particular genre. Many call him a classic of the "novel about himself" ("watakushi-shosetsu"), others talk about his closeness to romanticism, but despite the fact that both are undoubtedly present in his work, Osamu Dazai's prose is difficult to fit into narrow frames one genre. "Lost" is one of the stories of Dazai Osamu. Social movements and political development of the country occupy an important place here. The author is sure that war is a real absurdity, which brings nothing but destruction. He is sickened by the inhumanity of society, which is clearly manifested in the main character.

Keywords: *XX century, the story "The Lost", "existentialism", Dazai Osamu, "Oba Yozo" magazine "Bungeyishunju" ("Literary chronicle")*

The work of Dazai Osamu (Tsushima Shuji, 1909-1948) reflected the self-alienation of the individual with his moods of self-destruction and fatigue. The author, as a prominent representative of the "Non-Entertaining group" ("Shingesakuha"), expressed his pessimistic worldview in his last work "No longer a man" ("Ningen shikkaku", 1948), in which he showed the state of decline of man and society. In this work it is impossible not to see the imprint of Z.'s psychoanalysis. Freud, the literature of D. G. Lawrence, the philosophy of existentialism . An outstanding master of words, Dazai reflected in his works of art the tragedy of his era, the throwing of the intelligentsia, and his own mental suffering. Dazai's last major work was the novel "No Longer a Man", in which a hero named Oba Yozo tells a story about his bitter fate. The story is considered autobiographical, since its events converge with the facts of the writer's life, however, literarily reinterpreted, they bring out a portrait of the generation to which the author belonged.

The novel "No longer a man" is the final work of the writer, where he sums up his whole life: analyzing his own actions, relationships with loved ones and his attitude to others and society, Dazai Osamu passes a verdict on himself: "A lost man. Rather, I have completely ceased to be a human being."

The text of the novel is a framed story, in the center of which are three notebooks of a certain Oba Yozo (the main character and narrator of these recordings), interpreted by us as the confessional discourse of Dazai Osamu himself, framed by a preface and an afterword, in which the narrator (the main character of the first plan), according to his own words, has never in his life with the author of the recordings (Yozo) did not meet personally, but I saw only three of his photographs.

The notebooks chronologically describe the life of their author from early childhood to the age of twenty-seven. The entries are divided into three parts, respectively: childhood spent with family and schooling; adolescence in college and acquaintance with the life of a big city; life finish and self-assessment by the author of his life.

The structure of the story is of particular interest, since both the text of the notes and the text of the framing frame appear to be two different discourses of the writer: on the one hand, they are polemical in nature, and on the other, based on the structure of the full text of the story, they are autonomous from each other, independent and autosemantic.

It's like two different views on the same situation: one (the text of the frame) is from the external position of an outside observer, and the other (the text of the Edzo records) is from the internal position, i.e. the observed. In this artistic technique, one can see Dazai O.'s attempt to "semiotize the subject's own self" by endowing the narrative frame with the functions of a "mask". The text of the three notebooks, as already mentioned, appears to be the pure confessional discourse of Dazai O. himself, despite the fact that the author strives by all means to convince the reader that the main characters of both parts of the story are completely different and unfamiliar people.

The semantic and structural-formal division of the frame into a "preface" and an "afterword" also does not seem accidental: the writer, using chronological inversion when compiling parts of the framing text, pursues an important goal: to be "correctly" perceived and understood by his readers (and judges at the same time).

a) In the "preface", the reader gets acquainted with the personal (and therefore subjective) opinion of a stranger about another person (also unfamiliar to the reader), formed after looking at three photographs of the latter. The phrase that "I have never seen such a strange face" is repeated three times, and thus the reader is prepared for the strangeness of what will be described further. The beginning of the story with the words "I saw three photos of this man" on a subconscious level indicates to the reader that "this man" will be the main character in the central plot of the entire story.

Despite the fact that the text of the "preface" is formally presented in the form of a monologue, the "inner speech" of the narrator, but in essence it is deeply dialogical: the narrator's speech assumes the invisible presence of a second person — the listener (reader), and a third person who is assigned the function of an "evaluating party", whose opinion is indirectly given in the in the text as an argument for the correctness and objectivity of the narrator ("However, if these were people who know a lot about beauty, they would have mumbled "disgusting child" with terrible displeasure and discarded the photo as if it were a stuck caterpillar"). As a result, the reader, becoming more and more convinced of the truthfulness of the narrator's assessment of the "strange man", internally, without noticing it, is already biased and distrustful of "this man" in the photo.

b) In the "afterword", when the reader is already familiar with the story of Yozo in detail from the words of the hero himself (and generally has his own opinion about him), Dazai O. shows another possible point of view on Yozo and what happened to him: the reader gets acquainted with the woman who knew the author of the notebooks well, described in the story like "madam".

The dialogue between the hero of the "afterword" (who never named himself in the story) and "madame" characterizes Edzo from a fundamentally new and somewhat unusual side: a woman who "suffered terrible losses because of him" at the end of the dialogue (coinciding with the end of the text of the story) That's how he speaks about the hero: "It's all his father's fault. ... Ye-chan (i.e. Yozo), whom we knew, was very meek, very capable... If only he didn't drink like that, although... even if he did, he was a wonderful child, like a God."

It would be logically correct to place the "preface" and "afterword" in reverse order: first, tell how the notebooks fell into the hands of the narrator (and thereby "prepare" the reader for an adequate perception of the "confession"). Nevertheless, Dazai, in our opinion, deliberately arranges these parts of the story in such a sequence. Assuming that the framed text — this is the true confession of the author, who, although he repents, and personally passes sentence on himself, but, nevertheless, realizing his sinfulness, tries to "rehabilitate", whiten himself both before his conscience and in the eyes of the reader, then it is the appeal to the dialogical construction of the "afterword", in which "madame", although It is described as a "tortured and injured party", but still forgiving and deifying Yozo, confirms the idea that "confession presupposes a certain conscientious, but weak, maybe spoiled and still, on the whole, rather a good than a bad person."

Dazai Osamu believed that the weakness of a human being is a sign of good, not evil. Deeply convinced of his rightness, he sympathized with human weakness and on this occasion even entered into a polemic with the writer Shiga Naoya (1883-1971), reproaching him for not understanding the "beauty of weakness". According to Dazai, a weak person is acutely aware that human reality is ugly and human nature is disgusting, and therefore enters into an insoluble conflict with himself and the world.

Yozo failed to accept everyday existence, to become like the "being of others", defending his "otherness", putting forward the demand for "freedom" and "truth" in the forms of foolishness. In an unreasonably organized world, the absurd is carried to the extreme, moral self-awareness is suppressed, but humility turns into a challenge, and defeat into rebellion. Yozo and "society" are parallel worlds that coexist but do not touch. The hero is punished for his dissimilarity, and he can be likened to Sisyphus, about whom Albert Camus wrote: "I see this man descending with a heavy but steady step towards suffering that has no end. At this time, along with breathing, consciousness returns to him, inevitable as his calamities. And at every moment, descending from the top into the lair of the gods, he is above his fate. He is harder than his stone." Dazai convinces the reader of his sincerity with the modest style of narration, the mediocrity of the simple-minded narrator's speech.

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THE IMPACT OF INVESTMENTS ON THE ECONOMY OF THE REPUBLIC OF UZBEKISTAN AND THE IMPORTANCE OF ITS GEOGRAPHICAL LOCATION

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Аннотация: *В данной статье рассматриваются инвестиционные процессы после того, как Республика Узбекистан стала независимым государством, в том числе роль и эффективность инвестиций в государстве. Кроме того, перечислены основные факторы развития и модернизации экономики страны, показаны современные глобальные факторы и то, как формируются иностранные инвестиции в Республике. В конце статьи анализируются некоторые меры по совершенствованию инвестиционной политики государства.*

Ключевые слова: *экономика Республики Узбекистан, инвестиции, динамика экономического роста, принципы корпоративного управления, меры.*

Annotation: *This article presents investment processes after the Republic of Uzbekistan became an independent state, which cover the role and effectiveness of investments in the state. In addition, the main factors of development and modernization of the country's economy are listed, modern global factors and ways of forming foreign investments in the republic are indicated. At the end of the article, a number of measures to improve the investment policy of the state were analyzed.*

Keywords: *economy of the Republic of Uzbekistan, investments, investments, dynamics of economic growth, principles of corporate governance, measures.*

After gaining independence in 1991, the Republic of Uzbekistan decided to conduct an independent foreign economic policy aimed at achieving real openness of the economy and integrating it into the world economic system. The participation of the Republic of Uzbekistan in international cooperation is determined by natural, economic, cultural, historical and other opportunities. Innovative investments are important nowadays. They will help to improve the real sector of the country's economy and form a new quality foundation for stable, long-term development of the economy. The main factor for the development and modernization of the country's economy is the creation of a favorable investment environment, encouraging the business community to invest heavily in industry and high-tech production. Market processes are intensifying against the background of the growth of local production and high investment activity. The main goal of the investment policy is to develop investment activities that help improve the country's economy and increase the efficiency of social production.

Foreign direct investments play an important role in determining the dynamics, depth and scope of economic growth, as well as the speed of the process of changes in the economic system at the local level. Foreign direct investments have a positive effect on the private sector, the enterprises that make up the share of investments are characterized by a high level of applied technologies, including management technologies. That is, Uzbekistan imports technologies, principles of corporate management, all this accelerates the process of market reforms and the development of institutional infrastructure.

International rating agencies rate Uzbekistan at the level of "stability", the number of banks corresponding to this rating is increasing every year. In recent years, the Republic of Uzbekistan has made several achievements in reforming the legislative and administrative system of the republic.

The following factors are taken into account in the modern global economy:

a) how the market reforms will proceed

b) level of risk, including: risk of macroeconomic instability, legal risk

c) stability in politics

d) cheap production factors (especially cheap labor)

e) intellectual property management, sales strategy and product quality.

The purpose of the research is to determine the necessary measures for more active attraction of foreign investments to the country and its regions in general.

A deep and comprehensive study of the situation and dynamic changes taking place in Uzbekistan in recent years in the field of creating a new investment environment, its state and prospects, as well as determining the measures necessary to actively attract foreign investments to the country A qualitative and comparative analysis is being conducted to study. Foreign investments in the Republic of Uzbekistan are carried out in the following forms:

• Determining the share of participation in charter funds and property of economic subjects;

• Formation and development of economic entities belonging to foreign investors;

• Purchase of property, shares, securities, debt obligations issued by residents of the Republic of Uzbekistan;

• Intellectual property right;

• Purchase of trade and service facilities, residential buildings along with the land on which they are located, as well as ownership and use of land and natural resources.

Foreign direct investment can have different effects on domestic investment depending on economic conditions. Foreign investment activates domestic investment through the relationship between foreign and domestic firms, the creation of new products and services, and the introduction of new technologies and knowledge. The downside of this process is that local interest rates rise and exchange rates increase in value.

Since 2018, it has been regularly publishing investment attractiveness ratings of regions. The rating helps to assess the conditions created for investors in the regions of Uzbekistan, USA, Turkey, South Korea, Germany, Russia and Japan. In order to implement an active investment policy, taking into account the regional use of existing resources and the effective use of resources, including direct investments, to strengthen the current and technological re-equipment and the formation of new high-tech industries, as well as the employment of citizens investment projects were developed.Currently, the introduction of a functional system of investment insurance in the field of innovation is considered as another urgent measure, which is manifested in tax or state support for insurance companies that are ready to take on the risks of innovation. . Methodological support in the use of modern innovative projects is of particular importance in the study of the regional agrarian sector.

In order to activate the innovative and investment activities of the agricultural sector subjects, it is recommended to use the leasing mechanism in the investment project, which helps to update their resource-technical base and increase the competitiveness of the manufactured products.

In conclusion, it should be mentioned that the following measures should be taken to improve the state's investment policy:

1. Creation and improvement of tax mechanisms for regulatory and legal provision of investment activity, its promotion and introduction of its means into economic circulation;

2. Development of innovation process infrastructure, including information system support, financial, economic, production and technological support, certification and promotion of developments, training and retraining of personnel;

3. To support the process of rapid industrialization of world-class domestic and foreign scientific and technical achievements, increase of natural resources.

As a result, we can say that the above measures to increase investment and innovation activity and develop the national economy of Uzbekistan serve to develop scientific and technical potential, sustainable growth, increase the competitiveness of the national economy of Uzbekistan and create guarantees of the country's economic security in the future.

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PROSPECTS FOR THE DEVELOPMENT OF THE TRANSPORT SECTOR OF UZBEKISTAN IN THE CONDITIONS OF THE CORONAVIRUS PANDEMIC

Sobirov Azizbek Akbarovich

Анотация: *Быстрое распространение коронавирусной инфекции по миру привело к развитию глобального кризиса в области здравоохранения, перегрузке национальных систем здравоохранения и серьезным экономическим последствиям. Значительный аспект мер по предотвращению заражения в Узбекистане, в частности, радикальное ограничение транспортной деятельности и поиск путей выхода из кризиса, стимулировал разработку инновационных решений, более безопасных, экологически чистых и эффективных.*

Ключевые слова*: Транспорт, эффективность, пандемии коронавируса, товары и услуги, кризис, инновации, правила, мировой опыт, окружающая среда, цифровизация, инфраструктура, экология, глобальный.*

Annotation: *The rapid spread of coronavirus infection around the world has led to the development of a global health crisis, an overload of national health systems and serious economic consequences. A significant aspect of measures to prevent infection in Uzbekistan, in particular, the radical restriction of transport activities and the search for ways out of the crisis, stimulated the development of innovative solutions that are safer, cleaner and more efficient.*

Keywords: *Transport, efficiency, coronavirus pandemics, goods and services, crisis, innovation, rules, world experience, environment, digitalization, infrastructure, ecology, global.*

The situation of the coronavirus pandemic has greatly affected the development and prospects of the transportation industry. A drop in demand for goods and services and a high risk of contagion have led to a sharp and unprecedented decline in the volume of transport services around the world.

The pandemic situation has clearly shown the consequences of inaction in almost all aspects of human life and the global economy of transportation.

Prime Minister of the Republic of Uzbekistan A. Aripov Tashkent City, May 19, 2020, No. 295 of the Cabinet of Ministers, May 19, 2020, No. 295, in accordance with Annex 1, on the Highway Committee under the Ministry of Transport of the Republic of Uzbekistan:

1. General rules;
2. The main tasks and functions of the committee;
3. Rights and responsibility of the Committee;
4. The main functional tasks of the committee leadership;
5. Responsibility of the committee leadership;
6. Organization of committee activities;
7. The committee is structural of the central apparatus of the Ministry of Transport divisions, its regional offices, as well as a departmental member procedure of cooperation with organizations;
8. Advisory, advisory and expert bodies of the Committee;
9. Criteria for evaluating the effectiveness and efficiency of the committee's activity and work indicators;
10. Funding and material and technical support of the committee's activities,

pay for the work of its employees and financially encourage them;

11. The main goals of sustainable mobility have been developed within the framework of the final regulations. Each of these goals overlaps with the Sustainable Development Goals and the targets set within them.

A study of the consequences of the pandemic has shown a significant impact on overall usage, that is, in terms of supply and demand for transport services. There was a collapse of the air transport market, a significant part of the world's airlines suffered losses. The number of cars on the roads has dropped dramatically due to self-isolation recommendations. Similarly, public transport ridership has also fallen to an all-time low. Subway and commuter train ridership has also declined, and many aspects of daily life have moved online, from work flow to social interactions, education, and shopping.

The pandemic will undoubtedly accelerate the adoption of online tools. This prompted our country to think about how the development of the virtual environment can complement traffic flows, facilitate the use of transport services and expand their potential.

The crisis has significantly reduced the reliability and efficiency of transport networks, especially since in this sector air cargo and freight transport, logistics and production of goods are closely synchronized with each other, disruptions quickly affected global trade and exposed the fragility of the entire supply chain.

With the country facing shortages of medical supplies, raw materials, components, and finished goods, as well as logistical and stockpiling challenges, addressing this challenge requires transportation stakeholders to find software solutions to increase the resilience of their networks. Operators need to introduce big data technologies to adapt their work to new conditions.

Experts have recommended that transport companies take advantage of the forced stagnation caused by the decrease in passenger traffic during the pandemic and start developing and implementing analysis of vehicle loading and public transport routes. These tools allow for real-time monitoring and adjustments of the transport system. As a result of data collection and analysis, carriers can win back their customers by introducing new ticketing systems, improving security and further improving service. In terms of transport safety, the issue of road safety is usually raised. However, the pandemic has drawn more attention to another type of risk: the possibility of contagion. The potential risks of the virus spreading rapidly in transportation, especially public transportation. This has become the most pressing issue facing transportation systems since the pandemic began. Operators had to take emergency measures to protect their staff as well as passengers. After a pandemic, the traces of disinfection, distance and even contact with a potential virus carrier remain permanent. Looking at world experiences, the Beijing Metro has created a pre-trip online reservation and registration system using subcodes, which helps to monitor the movement of citizens, as well as reduce the density of passenger traffic. The environmental impact of the crisis was least expected, including a sharp drop in carbon emissions due to the closure of transport networks and businesses, suggesting that reducing the environmental impact of the transport sector is technically feasible.

Despite the fact that the introduction of self-isolation mode on a large scale is undesirable and incompatible with the long-term perspective, the crisis can create conditions for the transition to "green" transport. For example, the shift to telecommuting and e-commerce can significantly change our habits and lead to an overall reduction in the demand for transportation, which has a direct impact on emissions. The pandemic is driving the introduction of cycling

programs in our cities, including the development of cycling infrastructure. This is one effective way to ease congested transport systems and help citizens move away. Bicycle use has already increased in many countries, and this trend is likely to continue after the virus is over.

World analysts see the following consequences of the pandemic for the transport industry.

• the deepest crisis in the sector - in the short term, but a stable recovery in the long term. The transport sector, along with the hospitality and tourism sectors, has been the most affected by the crisis, but these sectors will stabilize in the long term as the global movement of goods and people resumes.

• Reduce the use of public transport.

This leads to a significant reduction in air emissions and a decrease in the number of traffic accidents.

The role of environmentally friendly and safe modes of transport will be reconsidered: metro, water transport, bicycles.

• revision of working life, organization of transport

This leads to a significant reduction in air emissions and a decrease in the number of traffic accidents. The role of environmentally friendly and safe modes of transport will be reconsidered: metro, water transport, bicycles.

• revision of working life, organization of transport

and infrastructure. In many cases, working from home has proven to be more effective than expected. This allows to revise not only the working methods, but also the entire urban infrastructure, adapting it to the "new normal". Due to the introduction of digital platforms, the work of public transport will change.

• quality development and improvement of the industry. Due to the pandemic, the increase in the number of transport trips can be maintained, which will improve the quality of transport service. New procedures for cleaning and disinfecting public transport will be maintained and will make transport more attractive and safer for citizens in the future. Digitization of the industry will accelerate, including the use of artificial intelligence through mobile processes in road map planning, contactless payments and management of public transport enterprises.

Despite the uncertainty that began to characterize the development of every sphere of human life during the pandemic, it is necessary to use the crisis as an opportunity to develop the transport sector in a more sustainable direction. The search for ways out of the crisis encourages the development of innovative solutions that are safer, more environmentally friendly and more efficient.

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FOREIGN EXPERIENCE OF PROSECUTOR'S CONTROL OVER LEGISLATIVE IMPLEMENTATION IN TAX AUTHORITIES

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Annotation: *The state of affairs in the tax sphere is significantly influenced by such factors as the imperfection and inconsistency of the current legislation regulating the procedure for taxation and granting benefits, as well as bringing violators to justice; insufficient analysis of judicial and investigative practice due to the small number of criminal cases of this category sent to court; inconsistency of decisions taken by arbitration courts and courts of general jurisdiction on claims of legal entities and individuals against tax authorities; the ill-considered, legislative lack of regulation of the system of activities of regulatory and law enforcement agencies in every area.*

Keywords: *tax offenses and crimes, prosecutorial supervision, sanctions*

Taking into account the problems arising in law enforcement practice, a radically new conceptual approach is proposed to change the current legislation, as well as to improve the activities of regulatory authorities, including by changing the structure of tax authorities.

The role of the prosecutor's office in the prevention of tax offenses and crimes has been determined, proposals have been made on the need to amend the Law "On the Prosecutor's Office of the Russian Federation" in terms of setting tasks for the prevention of offenses and crimes.

Taking into account the specifics of supervision, specific recommendations on its organization and implementation are given. Separate private methods of supervisory activities have been developed, as well as a system of measures to prevent tax offenses and crimes.

The conducted research shows that when developing and fulfilling certain requirements, the role of the prosecutor's office in preventing tax offenses and crimes can be very significant. The means of prosecutorial supervision adopted have an impact on both the causes and conditions conducive to the commission of offenses in the area under consideration. The presented figures indicate the ever-increasing role of prosecutorial influence aimed at preventing tax offenses. Satisfaction of over 99% of claims allows us to assert a highly qualified approach of prosecutors to the protection of public interests in the field of taxation.

65% of the surveyed city (district) prosecutors consider it their duty to take measures to prevent tax offenses and crimes. They consider the following to be the most effective of them: the use of the full range of means of prosecutorial influence from a warning to the initiation of a criminal case; ensuring regular receipt of information to the prosecutor's office from tax authorities; introducing acts of prosecutorial response; exercising prosecutorial supervision over regulatory bodies and bodies of the Ministry of Internal Affairs of the Russian Federation; interaction with the media; increasing the responsibility of heads of tax authorities for the work of subordinates when violations are detected by prosecutors; tightening sanctions for tax offenses and crimes; conducting training together with the operational staff of the Ministry of Internal Affairs of the Russian Federation and officials of regulatory authorities.

In France, the legislation on the prosecutor's office is developing in order to ensure guarantees of non-interference of the legislative and executive branches of government in the substantive activities of the tax authorities. The powers of both legislative and executive authorities are defined in such a way that they have no legal grounds to interfere in prosecutorial activities. In any case, specific boundaries are being defined for such an intervention.

The prosecutor in France can apply for documents in all court cases, whether criminal, civil or commercial, give explanations during the process and challenge court decisions of various jurisdictions in tax authorities. Moreover, there are areas of civil law relating, in particular, to the condition and legal capacity of persons for whom the Prosecutor of the Republic is considered the guarantor of the correct application of the law in tax authorities.

The peculiarity of tax control in France is that, the French taxpayer must be warned about the tax audit at least 8 days in advance. Without warning, a sudden check can be carried out only if there is reliable information that the company is evading taxes.

Inspections are usually carried out in the three preceding years. There are no special provisions on the frequency of inspections. With the rarest exceptions, repeated checks for one period are usually not carried out.

The choice of the company to be inspected is carried out according to many criteria, based on a risk analysis. Firstly, those enterprises that are potential violators are selected, and secondly, information from informants is used.

In the USA, there is no single legislative act that would define the functions, procedure and legal means of their implementation by the tax authorities. They are largely determined by common law and court decisions. In order to get an idea of the complex, multifaceted and multifunctional activities of American prosecutors, it is important to consider the structure of bodies and the content of these activities. The structure of the tax authorities of the state attorneys is similar to the corresponding structure of the ministry, but not uniform.

It is not rigid, and largely reflects the essence of the activities of tax authorities to ensure the rule of law. Thus, the New York State Attorney's Department has twelve district offices in the state. The office of the Prosecutor's Office (Attorney General's Office) includes a number of structural divisions. These include the Civil Rights Bureau. It is engaged in the struggle for equal rights of men and women in the field of work, social guarantees and benefits, and against racial discrimination. And the Bureau of Legality in tax authorities the field of labor relations implements measures of criminal and civil protection of citizens' labor rights. The Bureau initiates tax cases against employers who have criminally violated the rights of citizens, sues in court against employers who have caused damage to employees by violations of their rights, non-payment, late or incomplete payment of wages, etc. The Bureau also sues non-payers of taxes and other financial fees to the state revenue.

As the organizational formation and improvement of forms and methods of work, the focus in the priorities of the General Directorate of Tax Investigations of the US Department of Internal Affairs is gradually shifting from the suppression of specific violations of tax legislation to penetration into a potentially criminal environment in order to promptly develop suspects, as well as identify the shortcomings they use in current legislation and new ways to legalize illegally obtained funds.

When conducting investigations in cases involving violations of financial and tax legislation, representatives of Steuf have the same rights as police officers who are guided in their activities by the relevant provisions of the Code of Criminal Procedure.

The German Tax Code provides significant powers to the tax police to conduct searches and personal searches of citizens, detain suspects and confiscate documents [1].

The management of Steuf has the right to appoint a special investigation into any violation of tax legislation. At the same time, the tax police has the exclusive right to seize documents and obtain the information it needs from almost all public and private institutions in the country, with

the exception of some special services. There are many similarities in the activities of the tax police in Germany. However, the judicial practice of Germany reveals more widely the facts of violation of tax legislation.

When monitoring the correctness of taxpayers' calculation of tax amounts, tax authorities can use any information contained in databases available to them. At the same time, in Sweden and Finland, the tax service has already initiated the independent preparation of tax returns for taxpayers, who then receive this declaration via secure communication channels and can either agree with it or wish to make their own changes and additions. In the first case, it is enough for them to confirm this declaration using the electronic signature mechanism, in the second case, they already need to get in touch with the tax service and provide the necessary documentary evidence to substantiate the proposed amendments and changes.

As for the fight against one-day firms, millions of firms open and close in developed countries every year, without having selfish goals. For example, Henry Ford managed to achieve success with only the fifth company, the first four attempts failed. In fact, it is necessary to master the ability to correctly and accurately regulate the processes of creation, operation and closure of legal entities. In the West, the authorities do not complicate their lives by searching for addresses or just signs of life of registered legal entities.

We also note the experience of Norway, where a joint investigation of tax crimes by law enforcement agencies is organized - based on the position that almost every crime has an element of a tax offense. The advantage of this practice is that, firstly, investigations are conducted using a single information base, and, secondly, if there are difficulties in preparing an evidence base for a crime for trial, the investigation remains able to bring to justice for committing tax offenses.

The use of foreign experience is appropriate and will have the proper effect as a thorough analysis of the possibilities of its implementation in the conditions of reality. The interstate exchange of experience and results of implemented measures on state control of tax offenses will ensure the prevention and neutralization of tax offenses, will allow maintaining a high level of budget revenues and strengthen awareness among citizens and organizations of the need to financially ensure the functioning of the state with payments of taxes, fees and other mandatory payments.

In this regard, ensuring the correct exchange of information between tax authorities and other executive authorities is one of the priorities and a systematic approach is needed here. The use of a single information base, which exists in many developed countries (for example, in Germany, Norway, France), is an important condition for increasing the effectiveness of their interaction.

In the United States, for example, information of interest to the Internal Revenue Service (IAS) for calculating income tax comes from the following sources: each taxpayer is required to send an annual declaration of his total income in the prescribed form to the IAS; at the same time, all government agencies banks, exchanges, firms, etc.

The array of information coming from these sources is entered into a computer accounting system, processed and compared with the data contained in tax returns. The use of secret, special mathematical models in information processing makes it possible to select tax returns with "increased potential" for thorough verification. The results of the work of the SVD show that 90% of taxpayers in the United States pay taxes in good faith and correctly, whereas in Russia, according to official data from various structures, from 20 to 40% of potential taxpayers hide from paying taxes. In 2003, the Internal Revenue Service established a special unit (professional

responsibility Service) for interaction with tax consultants, state registration of their status, and supervision of compliance with established standards of activity.

The strategic direction of improving the work of tax authorities is the introduction into practice of new forms and methods of tax control based on advanced information and analytical technologies. Currently, the taxpayer has become more literate, and the unscrupulous taxpayer is more resourceful.

It is impossible to identify the most common tax evasion schemes based on the use of double-entry bookkeeping, as well as complex mechanisms for concealing tax objects associated with the use of one-day firms on the basis of checking accounting documentation.Therefore, at present, the main task of the tax authorities, which should be addressed by their efforts - This is the task of strengthening the analytical component of the work of tax authorities, introducing into the practice of tax control a comprehensive systematic economic and legal analysis of financial and economic entities of the economy.

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SARALASH STANSIYASINING ISH HAJMINI HISOBLASH

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Annotatsiya. *Saralash bekatlarining temir yo‘llar tarmog‘idagi ahamiyati katta bo‘lib, ularda yuk poyezdlari shakllantiriladi, yo‘lovchilarga xizmat ko‘rsatiladi, tranzit poyezdlar o‘tkaziladi, lokomotivlar va lokomotiv brigadalari almashtiriladi, harakatdagi tarkibga texnik xizmat ko‘rsatiladi. Saralash bekatlarida ommaviy ravishda poyezd tarkiblari tuziladi va yangi tarkiblar shakllantiriladi. Ushbu maqolada saralash bekatini loyihalash uchun zarur bo‘lgan ma’lumotlar tahlil qilinib, bekatning talabiy qayta ishlash qobiliyati va saralash tepaligining qayta ishlash qobiliyatini hisoblash metodikasi keltirilgan.*

Kalit so‘zlar. *Saralash bekati, temir yo‘llar, yuk poyezdlari, yo‘lovchi xizmatlari, texnik xizmat ko‘rsatish, lokomotivlar, loyihalash, qayta ishlash qobiliyati, saralash tepaligi.*

Annotation. *Sorting stations play a crucial role in the railway network, where freight trains are formed, passenger services are provided, transit trains are processed, locomotives and locomotive crews are changed, and technical services are performed on the moving stock. At sorting stations, train formations are done in bulk, and new formations are created. This article analyzes the data required for the design of a sorting station, providing methodologies for calculating the station's required processing capacity and the sorting hump's processing capacity.*

Key words. *Sorting station, railways, freight trains, passenger* services, technical services, locomotives, design, processing capacity, sorting hump.

O‘zbekiston temir yo‘llari tarmog‘i faoliyatida saralash bekatlari muhim o‘rin tutadi. Ularda yuk poyezdlari tuziladi, yo‘lovchilarga xizmat ko‘rsatiladi, uchastka va yig‘ma poyezdlar shakllantiriladi, tranzit poyezdlariga ishlov beriladi, lokomotivlar va lokomotiv brigadalari almashtiriladi, harakatdagi tarkibga texnik ishlov beriladi, yuk ortish-tushirish ishlari va sanoat korxonalariga xizmat ko‘rsatish tashkil etiladi va h.k.

Saralash bekatlari asosan qayta ishlash uchun kelayotgan poyezd tarkiblarini ommaviy ravishda saralab yo‘lning umumtarmoq poyezdlar tuzish rejasi asosida yangi tarkiblarini tuzishdan iborat. Saralash bekatlarida (o‘tuvchi) to‘ppa-to‘g‘ri boradigan, uchastka, terma, uchastka-terma, eltib beruvchi va uzatuvchi poyezdlar tarkiblari vagonlar oqimini tashkil qilish bo‘yicha yo‘riqnoma asosida tuziladi. Saralash bekatlarida shu qatorda tranzit yuk poyezdlarni o‘tkazish bilan bog‘liq jarayonlar, lokomotivlarni ta’mirlash va ekipirovka qilish, vagonlarni ta’minlash va ularga texnik xizmat ko‘rsatish, tirik jonzotli poyezdlarni suv bilan ta’minlash, tranzit mayda jo‘natma yuklarni va konteynerlarni saralash va shu kabi ishlar bajariladi.

Shu bilan birga transport sohasidagi tashishning yangi turlarini joriy etish bilan bog‘liq bo‘lgan, nafaqat tashkiliy mexanizmlarni takomillashtirish, balki qo‘shimcha kapital jamg‘armalar joylashga asoslangan har qanday chora-tadbirlar ularga iqtisodiy jihatdan baho berishning o‘ziga xos yondashuvlari ishlab chiqilishini talab qiladi. Saralash stansiyalarida tegishli yo‘l tarmoqlari, qurilmalar va texnik jihozlar mavjud.

Saralash bekatini loyihalash uchun berilgan ma’lumotlarni tahlil qilish. Loyiha uchun berilgan ilk ma’lumotlarni o‘rganish va chuqur taxlil qilish loyihada to‘gri, prinsipial echimlar va xulosalar qabul qilishda katta ahamiyatga ega bo‘ladi. Buning uchun berilgan ma’lumotlar asosida saralash stansiyasining joylashish sharoitlari va meyoriy hujjatlar o‘rganib chiqilishi kerak. Mavjud saralash bekatini loyihalash uchun misol tariqasida quyidagi ma’lumotlar berilgan:

1-jadval

Yo‘lovchi poyezdlari harakati(sutkada juft poyezd hisobida)

Dan/ ga				B uzeliga			Jami
				Uzoqqa qatnovchi	Mahalliy	Shahar-atrof	
A				2	4	6	13
V				2	3	6	12
G				1	4	5	10

2-jadval

“B” bekatida tuziladigan yuk poyezdlarining manzillar bo‘yicha taqsimlanishi

Yo‘nalishlar nomi	Manzillarning shartli raqami					Jami.%
	1	2	3	4	5	
A	22	28	30	20		100
V	29	21	25	25		100
G	20	20	20	20	20	100

3-jadval

Saralash bekatida yuk poyezdlar harakati

Qaytish manzili		Borish manzili poyezdlar turi buyicha								
		A		V		G		B uzel		Jami
		r	.i	Tr	.i	r	.i	terma	uchastka	Tr/Q.i
A				14		5		2	2	43
V		3				4		1	1	39
G		2		10				1	1	37
B uzel	Terma									4
	Uchast									4
Jami		5	5	24	4	9	2	4	4	127

4-jadval

Bekatda qayta ishlanuvchi poyezdlar miqdori

Qaytish manzili		A	V	G	B uzel		Jami
					terma	uchastka	
A			5	5	2	2	14
V		5		5	1	1	12
G		6	7		1	1	15
I uzel	Terma	2	1	1			4
	Uchastka	2	1	1			4
Jami		15	14	12	4	4	49

Uzelga keladigan yo‘nalishlarda shox yo‘llar sonini topish. Bekatda shox yo‘llar sonini topish uchun har bir yo‘nalishning talabiy poyezd o‘tkazish qobilyatini quyidagicha hisoblaymiz:

$$N^{i}_{oqim}=[(N_{ob}-N_{sb})\cdot\beta+N_{sb}\cdot\varepsilon_{sb}+N_{p}\cdot\varepsilon_{p}+N_{pr}\cdot\varepsilon_{pr}+N_{xoz}]\cdot(1+\alpha),$$

bu yerda N_{jami} – yo‘nalishidagi yukli poyezdlarning soni,topshirikdagi 5-jadvalning “Hammasi” bo‘limidan olinadi;

N_{sb} – terma poyezdlarning soni;

N_{p} – uzoqqa katnovchi yulovchi poyezdlar soni (4 - jadval);

N_{pr} – shaharatrof poyezdlari soni;

N_{xoz} – uchastkada xo‘jalik poyezdlari soni (1-2);

β – harakat miqdori notekislik koeffitsiyenti (1,1-1,5);

ε_{sb}; ε_{p}; ε_{pr} – yuk poyezdlarining boshka turdagi poyezdlar hisobiga olinish koeffitsiyenti, jumladan: ε_{sb}=1,5-2,0; ε_{p}=*1,1-1,3*; ε_{pr}=*0,7-1,0.*

α – yo‘l poyezd o‘tkazish qobiliyatining zaxira koeffitsiyenti(0,15-0,2).

$$\mathbf{N}^{B-A}_{\mathbf{oqim}}=\big((43-2)\cdot 1{,}5+2\cdot 1{,}5+2\cdot 1{,}2+6\cdot 1+1\big)\cdot(1+0{,}1)=82\ juft$$

$$\mathbf{N}^{B-V}_{\mathbf{oqim}}=\big((39-1)\cdot 1{,}5+1\cdot 1{,}5+2\cdot 1{,}2+6\cdot 1+1\big)\cdot(1+0{,}1)=75\ juft$$

$$\mathbf{N}^{B-G}_{\mathbf{oqim}}=\big((37-1)\cdot 1{,}5+1\cdot 1{,}5+1\cdot 1{,}2+5\cdot 1+1\big)\cdot(1+0{,}1)=69\ juft$$

Temir yo‘llarning poyezd o‘tkazish qobiliyati haqidagi tavsiyalarga tayanib, o‘tkazish qobiliyati 35-40 juftdan ortik bo‘lgan barcha uchastkani ikki yo‘llik qilib qabul qilish mumkin.

Saralash bekatining talabiy qayta ishlash qobilyatini topish. Saralash bekatining talabiy qayta ishlash qobiliyatini (N_{tal}) topish uchun berilgan topshiriq asosida bekatda harakat jadvalini tuzish quyidagicha tavsiya etiladi.

5-jadval

Poyezd hisobida

Qaytish manzili	A	V	G	B uzel		Jami
				terma	uchastk	
A		5	5	2	2	14
V	5		5	1	1	12
G	6	7		1	1	15

B uzel	**terma**	2	1	1			4
	uchastka	2	1	1			4
Jami		15	14	12	4	4	49

6-jadval

Vagon hisobida

Qaytish manzili		**A**	**V**	**G**	**B uzel**		**Jami**
					terma	**uchastk**	
A			295	295	118	118	826
V		295		295	59	59	708
G		354	413		59	59	885
B uzel	**terma**	118	59	59			236
	uchastka	118	59	59			236
Jami		885	826	708	236	236	2891

Talabiy qayta ishlanadigan vagonlar soni quyidagi formula orqali hisoblab topiladi:

$$N_{talabiy}^{per} = n_{aralash} \cdot N_{per} \cdot 1,2\ vag/sutka;$$

bu yerda $n_{aralash}$ – aralash vagonlar soni *(hisoblab topilgan 59 vag);*

N_{per} –qayta ishlanadigan poyezdlar soni (4-*jadval jamisi);*

$$N_{talabiy}^{per} = 59 \cdot 49 \cdot 1,2 \approx 3470\ vag/sutka;$$

Talabiy vagonlar soni bizda $N_{talabiy}^{per} = 3470\ vag/sutka$ ni tashkil etadi.

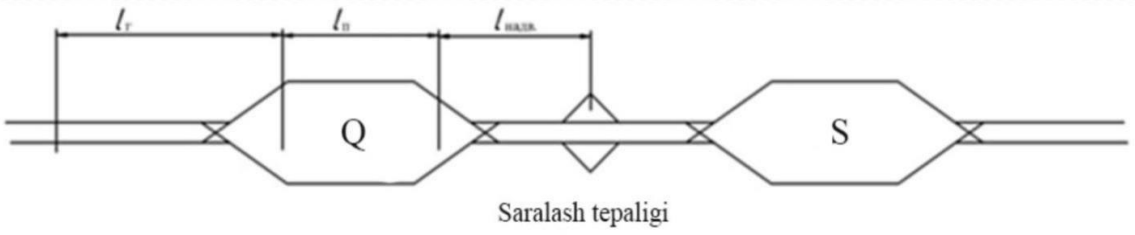
Saralash tepaligining qayta ishlash qobiliyatini aniqlash. Saralash tepaligining qayta ishlash qobiliyatini quyidagi formula bo‘yicha hisoblash mumkin:

$$N_{\text{расч}} = \frac{\alpha_{\text{гр}}(1440 - \sum T_{\text{пост}})}{t_{\text{и}}} \cdot n_c$$

bu yerda $\alpha_{\text{гр}}$– saralash tepaligi ishlash vaqtining harakat yo‘llari kesishuvi natijasida uzilishlarini hisobga oluvchi koeffitsiyent (0,95-0,97);

$\sum T_{\text{пост}}$– lokomotivlarni ekipirovka qilish, smena almashish va shunga o‘xshash doimiy ishlarga ketadigan vaqt, min;

$t_{\text{и}}$ – tepalikning texnologik intervali, ya’ni bir sostavni saralash tepaligidan tarqatishga ketadigan o‘rtacha vaqt, min.



1-rasm. Saralash bekati sxemasi

l_{g} – strelkali bo‘g‘iz uzunligi, m;

l_{p} – foydali uzunlik, m;

$l_{nadv.}$– vagonlarni tarqatish uchun tepalikkacha surish yuli uzunligi, m;

P – qayta ishlanuvchi poyezddar uchun qabul parki;

S – saralash parki;

Lokomotivning saralanuvchi tarkib orqasidan qabul parkiga kirishi uchun o‘tadigan yo‘li

$$l_{p.sos.}=2l_g+l_p+l_{nadv.}$$

Tarkibni tarqatish uchun sarflanadigan vaqt:

$$t_{rasf} = \frac{l_{\text{п}} - l_{\text{л}}}{60 \cdot V_{\text{расф}}}, daq.$$

bu yerda V_{rasf} – sostavni tarqatish tezligi, m/s.

Manyovr lokomotivining saralash tepaligidan qabul parkidagi yangi tarkib orqasiga kirish vaqti

$$t_{\text{п.сос.}} = \frac{l_{\text{п.сос.}}}{16{,}7 \cdot V_{\text{п.сос.}}}, daq.$$

Lokomotivning tarkibni saralash tepaligi cho‘qqisigacha surish uchun sarflanadigan vaqti

$$t_{\text{надв.}} = \frac{l_{\text{надв.}}}{16{,}7 \cdot V_{\text{надв.}}}, daq.$$

$l_{p.sos.}$=2x180+1050+500=1910 m

$$t_{\text{расф}} = \frac{1050 - 34}{60 \cdot 1{,}4} = 12\ daqiqa$$

$$t_{\text{п.сос.}} = \frac{1910}{16{,}7 \cdot 20} = 6\ daqiqa \qquad t_{\text{надв.}} = \frac{500}{16{,}7 \cdot 7} = 4\ daqiqa$$

Xulosa. Ushbu maqolada saralash bekatining loyihalash uchun zarur bo‘lgan ma’lumotlar tahlil qilindi va bekatning talabiy qayta ishlash qobiliyati hamda saralash tepaligining qayta ishlash qobiliyatini hisoblash metodikasi keltirildi.

Natijalar shuni ko‘rsatadiki, saralash bekatlarida ommaviy ravishda poyezd tarkiblari tuzish va yangi tarkiblarni shakllantirish jarayonlari, tranzit poyezdlarining o‘tkazilishi, lokomotiv va brigadalarining almashtirilishi, texnik xizmat ko‘rsatish kabi jarayonlar yuqori samaradorlik bilan tashkil etilishi lozim. Transport sohasida tashishning yangi turlarini joriy etish uchun tashkil etiladigan chora-tadbirlar iqtisodiy jihatdan baholanishi va ularning amalga oshirilishi uchun qo‘shimcha kapital jamg‘armalar joylashtirilishi kerak.

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DASTLABKI TERGOVNI TO'XTATISH INSTITUTINING MOHIYATI VA NAZARIY-HUQUQIY JIHATLARI

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Annotatsiya. *Jinoyat protsessual qonunchiligida jinoyat ishlarini yuritishda dastlabki tergovni to‘htatish instituti mavjud bo‘lib, protsessual muddatlarga amal qilishda mazkur institutdan foydalanish muhim ahamiyatga ega hisoblanadi. Mazkur tezisda jinoyat ishlarini tergov va sud muhokamasida yuritishda foydalaniladigan dastlabki tergovni to‘xtatish nistitutining mohiyati, to‘xtatish asoslari va mazkur institutning nazariy-huquqiy jihatlari haqida fikr yuritilgan. Bu borada dastlabki tergovni to‘xtatish institutining huquqiy jihatdan takomillashtirish bo‘yicha taklif va tavsiyalar ishlab chiqilgan.*

Kalit so‘zlar: *Jinoyat-protsessual qonunchilik, dastlabki tergov muddatlari, dastlabki tergovni to‘xtatish, protsessual muddatlar, sud protsessi, tergovchi, ayblanuvchi, qidiruv.*

Аннотация. *В уголовно-процессуальном законодательстве существует институт приостановления предварительного следствия при производстве уголовных дел, и исполбзование этого института имеет большое значение при реализации процессуальных сроков. В данной статье рассматривается сущность института приостановления предварительного следствия, применяемого при расследовании и судебном разбирательстве уголовных дел, основания приостановления и теоретико-правовые аспекты этого института. В связи с этим разработаны предложения и рекомендации по правовому совершенствованию института приостановления предварительного расследования.*

Ключевые слова: *Уголовно-процессуальное законодательство, сроки первоначального расследования, приостановление предварительного следствия, процессуальные сроки, судебный процесс, следователь, обвиняемый, обыск.*

Abstract. *In the criminal procedural legislation, there is an institution of suspension of the preliminary investigation in the conduct of criminal cases and the use of this institution is considered important in the observance of procedural deadlines. This thesis discusses the nature of the institution suspension of the preliminary investigation used in the investigation and trail of criminal cases, the grounds for suspension and the theoretical and legal aspects of this institution. In this regard, proposals and recommendations on the legal improvement of the institution of stopping the preliminary investigation have been developed.*

Key words. *Criminal-procedural law, initial investigation periods, suspension of initial investigation, procedural periods, court process, investigator, accused, search.*

KIRISH. Hozirgi davrda inson huquq va erkinliklarini ta’minlash dunyo hamjamiyat oldida turgan eng muhim masalalardan biri bo‘lib kelmoqda. Buning zamirida esa jinoyat protsessida shaxsning huquq va erkinliklarini himoya qilishni ta’minlaydigan mexanizmlarning takomillashtirilishi alohida ahamiyatga ega. Chunonchi, jinoyat protsessual va boshqa qonunchilik sohalariga ham tadbiq etilayotgan ham o‘zining ijobiy natijasini ko‘rsatib kelayotgan liberallashtirish bugungi kuda yanada dolzarb masalalarni ko‘tarishni taqazo etmoqda CHunki qonun istuvorligi va inson qadriyatlarini ustunligini ta’minlash ni o‘z ichiga olgan konstitutsiyaviy talab ham huquqiy demokratikdavlat qurish va adolatli fuqarolik jamiyatini shakllantirishning shartlaridan biri hisoblanadi. Sud-huquq tizimidagi shaxsning huquq va manfaatlarini himoya qilish yo‘lida demokratlashtirish va liberallashtirish jarayonlari jinoyat protsessual qonunchiligida jinoyat ishlarini yuritish yuzasidan dastlabki tergovni to‘xtatish institutiga ham o‘z ta’sirini ko‘rsatmasdan qolmadi.

O‘zbekiston Respublikasi ko‘plab xorijiy davlatlar bilan jinoyat ishlari yuzasidan o‘zaro huquqiy yordam ko‘rsatish, xususan ayblanuvchilarni ushlab berish to‘g‘risidagi shartnomaviy munosabatlarga kirishilayotgani va jinoyat ishlarini yuritish sohasida xalqarohamkorlikqilishga oid protsessual normalarning qayta ishlab chiqilganligiga erishildi. SHunga qaramay jinoyat ishlarini yuritishda, dastlabki tergov to‘xtatilgan jinoyat ishlari bo‘yicha amalga oshiriladigan harakatlarda, sud va huquqni muhofaza qilish organlarining o‘zaro hamkorligini yanada sifatli va samarali tashkil etish hali ham muhim vazifalardan bo‘lib kelmoqda.

ASOSIY QISM. Jinoyat protsessual qonunchiligida dastlabki tergovni to‘xtatish instituti jinoyat protsessual huquqi nazariyasi hamda huquq sohasidagi olimlarning diqqat e’tiboridagi muhim masalalardan biri hisoblanib keladi. Jaxonning ayrim davlatlarida jinoyat ishlarini yuritishni to‘xatishga yo‘l qo‘yilmasa-da, aksariyat davlatlarda ish yuritishni aniq protsessual muddatlar bilan cheklanganligi bois jinoyat ishlari yuzasidan dastlabki tergovni to‘xtatish qoidalariga amal qilib kelmoqda. Biroq hozirgi milliy qonunchiligimizdagi normalarga global unikatsiyalashuvi va halqaro qoidalarning milliy qonunlarga implementatsiya qilinish jarayoni dastlabki tergovni to‘xtatish institutining istiqboliga ham ta’sir etmasdan qolmadi.

Shu jumladan, dastlabki tergov organlari faoliyatini takomillashtirish maqsadida keyingi paytlarda bir qator islohotlar amalga oshirildi. Xususan so‘ngi vaqtlarda Konstitutsiyamizda ham belgilab qo‘yilgan normalarga asosan ham dastlabki tergov davomida jinoyat sodir etgan shaxslarni aniqlash va fosh etish, qidiruvdagi ayblanuvchilarni ushlash choralarini ko‘rish, dastlabki tergovni protsessual qonunchilikda ko‘rsatilgan asoslar bo‘yicha to‘xtatish, shu bilan bog‘liq protsessual hujjatlarni rasmiylashtirish masalalariga alohida e’tibor qaratib kelinmoqda

Mamlakatimizda demokratik davlat qurish jarayonida jinoyat sodir etgan shaxslarni aniqlash va fosh etish, qidiruvdagi ayblanuvchilarni ushlash choralarini ko‘rish, dastlabki tergovni protsessual qonunchilikda ko‘rsatilgan asoslar bo‘yicha to‘xtatish, shu bilan bog‘liq protsessual hujjatlarni rasmiylashtirish muhim ahamiyat kasb etadi. Sudga qadar ish yuritish bosqichlarida dastlabki tergovni to‘xtatishda protsessual normalar talablaridan kelib chiqqan holda ishlash borasida amalga oshirilgan chora-tadbirlarga qaramay, shu kunga qadar ayblanuvchi tariqasida ishda ishtirok etishi lozim bo‘lgan shaxs aniqlanmaganligi munosabati bilan jinoyat ishi yuzasidan dastlabki tergovini asossiz to‘xtatish, qidiruvdagi shaxslarni turgan joyini aniqlash va ushlash bo‘yicha tezkor-qidiruv faoliyatini amalga oshiruvchi organlar bilan hamkorlikning etarli darajada yo‘lga qo‘yilmaganligi, ayblanuvchi O‘zbekiston hududidan tashqarida bo‘lgan hollarda uni ushlash bo‘yicha horijiy davlatlarning vakolatli organlari bilan hamkorlik qilishda kamchiliklarga yo‘l qo‘yilayotganligini kuzatishimiz mumkin. Mazkur salbiy holatlarni oldini olish maqsadida Jinoyat-protsessual kodeksida nazarda tutilgan dastlabki tergovni to‘xtatish, qayta tiklash va qidiruv e’lon qilish bilan bog‘liq qoidalar mazmunini davr talabi bo‘yicha qayta ko‘rib chiqish zaruriyati tug‘ilmoqda. Shunga asosan qonunchilik va normativ huquqiy bazadagi kamchiliklarga imkon qadar tezroq o‘zgartirish kiritish, huquqni qo‘llash amaliyotida jiddiy o‘zgarishlarni joriy etish, huquqni muhofaza qilish va sud organlarining faoliyatida faqat va faqat qonunga rioya etilishini ta’minlash bilan bog‘liq ishlarni takomillashtirish darkor. Darhaqiqat, Jinoyat-protsessual qonunchilikning 2-moddasiga ko‘ra, Jinoyat protsessual qonun hujjatlarining vazifalari jinoyatlarni tez va to‘la ochishdan , jinoyat sodir etgan har bir shaxsga adolatli jazo berilishi hamda aybi bo‘lmagan hech bir shaxs javobgarlikka tortilmasligi va hukm qilinmasligi uchun aybdorlarni fosh etishdan hamda qonunning to‘g‘ri tatbiq etilishini ta’minashdan iboratdir. Ushbu vazifalarning to‘liq amalga oshirilishi esa jinoyat ishlari bo‘yicha protsessual harakatlar o‘tkazilishining amalda to‘g‘ri va aniq, adolatli amalga oshirilishini taqozo etadi.

Jinoyat protsessi to‘liq jarayon sifatida o‘ziga xos protsessual ishtirokchilari tomonidan amalga oshiriladigan harakatlar, ular tomonidan qabul qilinadigan qarorlar, protsessual qonun doirasida belgilangan muddatlar bilan tavsiflanadi. Mazkur elementlar, o‘z navbatida, protsessual faoliyatning bir tizimda olib borilishini ta’minlaydi. Shunga asosan, har bir jinoyat ishi odilona tamomlangan bo‘lishi va o‘zining mantiqiy yakuniga ega bo‘lishi lozim. Biroq, jinoyat protsessining deyarli barcha bosqichlarida ish yuritishga monelik yoki to‘sqinlik qiladigan holatlar vujudga kelishi mumkin. Buning ob’ektiv va sub’ektiv xarakterdagi sabablari bo‘lib, ushbu holatlar qatoriga dastlabki tergovni, jinoyat ishi yuritishni va boshqa protsessual harakatlarning to‘xtatilishini misol qilib keltirishimiz mumkin.

Darhaqiqat, “Dastlabki tergovni to‘xtatish” tushunchasiga to‘xtaladigan bo‘lsak, bu xususida turli xil fikrlar bildirilgan. Bir qator huquqshunos olimlar tomonidan “jinoyat ishi yuzasidan dastlabki tergovni to‘xtatish instituti” belgilarini tavsif etishga qaratilgan ilmiy tadqikot ishlari olib borilgan. Jinoyat ishi yuzasidan dastlabki tergovni to‘xtatish protsessual faoliyati va ushbu huquq instituti doirasidagi nazariy tortishuvlar dastlab mazkur atamaning lug‘aviy ma’nosini taxlil etish orqali boshlanadi. Yuridik adabiyotlarning tahlili shuni ko‘rsatadiki, ayrim mualliflar o‘z asarlarida Jinoyat-protsessual kodeksidagi mavjud Dastlabki tergovni to‘xtatish bo‘yicha “jinoyat ishini to‘xtatish” atamasini qo‘llagan bo‘lsalar, boshqalari “jinoyat ishini yuritishni to‘xtatish”, “Jinoiy sudlovni to‘xtatish” iboralaridan, boshqa bir guruh olimlari esa jinoyat protsessidagi muayyan bosqichlarning to‘xtatilishi xususida bayon qilishni maqsadga muvofiq deb hisoblaydilar. Jumladan, Z.F.Inog‘omjonova va G.Z.To‘laganova “dastlabki tergovni to‘xtatish”, boshqa huquqshunoslar esa dastlabki tergovni va surishtiruvni to‘xtatish”iboralaridan foydalanganlar. Hozirgi kunda ushbu protsessual institut yuridik adabiyotlarda turlicha nomlanadi. Fikrimizcha, Jinoyat-protsessal qonunchilikka ko‘ra, “dastlabki tergovni to‘xtatish” protsessual harakati to‘liq xarakterga ega emas, Jinoyat-protsessual qonunchilikda jinoyat ishini to‘xtatish masalasi dastlabki tergov bosqichida (JPK 364-371-moddalarida), sud bosqichida (JPK 399-400 moddalari), sud muhokamasi jarayonida uchrashi mumkin (JPK 420-420-moddalari). Fikrimizcha, Jinoyat protsessual qonunchiligida “dastlabki tergovni to‘xtashish” protsessual instituti dastlabki tergov va sud bosqichida normalarni tartibga solganligi va ulardagi umumiy asoslar bilan baravar qo‘llanilishida o‘ziga xos bo‘lganligi sababli ushbu bosqichlarda “to‘xtatish” so‘zini qo‘llashda yagona bir atamadan foydalanish maqsadga muvofiq emas. Biroq jinoyat-protsessual ish yurituvni amalga oshirishda ma’lum muddatda protsessual harakatlarni to‘xtatilishiga olib keladigan vaziyatlarni jinoyat-protsessini har qanday bosqichida alohida ahamiyat kasb etadi. Shunga ko‘ra, “to‘xtatish” tushunchasini o‘z navbatida tor va keng ma’nolar orqali huquqiy izohlashimiz mumkin. Misol uchun, jinoyat ishini to‘xtatish keng ma’noda alohida protsessual institut sifatida ifodalansa, tor ma’noda esa protsessual harakatlarni to‘xtatish, ya’ni jinoyat protsessining turli bosqichlarida xususan, dastlabki tergovda, jinoyat ishini sudda ko‘rish uchun tayinlashda hamda sud muhokamasida uchraydigan ba’zi harakatlarnigina o‘tkazishni to‘xtatishni tushunishimiz mumkin. Biroq shuni alohida ta’kidlab o‘tish lozimki, jinoyat ishini to‘xtatishda protsessual harakatlarni amalga oshrishi batamom to‘xtatilmaydi, balki ish yuritish jarayonining xarakteri va yo‘nalishi o‘zgaradi. Sud-huquq amaliyotida surishtiruvchi, tergovchi jinoyat ishi yuzasidan dastlabki tergovni to‘xtatish to‘g‘risida qaror qabul qilganidan keyin hech qanday protsessual harakatlarni amalga oshirishi mumkin emasligi ta’kidlangan bo‘lsa-da, ammo tezkor-qidiruv harakatlari orqali jinoyat sodir etgan shaxslarni aniqlash va ayblanuvchilarni qidirish davom etaveradi (JPK ning 370-moddasi) hamda qamoqqa olish tarzidagi extiyot chorasini qo‘llash yoki ushlab turish harakatlari jinoyat ishi to‘xtatilishiga qaramay amalga oshirilishi mumkin bo‘lgan protsessual harakatlar ekanligi Jinoyat-protsessual qonunchiligimizda belgilib o‘tilgan.

Bu borada M.S.Dyachenko dastlabki tergovni to‘xtatib turishni “qonunda ko‘rsatilgan holatlar, tergov harakatlarini amalga oshirishning vaqtincha to‘xtatilishi natijasida kelib chiqqan” deb belgilaydi. "Qonunda belgilangan jinoyat ishini yuritishda vaqtinchalik tanaffus, ayblanuvchining kelmaganligi yoki uning jinoyat protsessida ishtirok etishining mumkin emasligi sababli dastlabki tergovni to‘xtatib turish instituti tushuniladi” - deb fikr bildirgan

Shuningdek. K.A. Sergeev “Jinoyat ishini yuritishni to‘xtatib turish - bu bosqichlarda yuzaga keladigan alohida turdagi huquqiy munosabatlarni tartibga soluvchi huquqiy normalar yig‘indisi va ayblanuvchining vaqtinchalik yo‘qligida yuzaga keladigan dastlabki tergov va sud bosqichlari davomida jinoiy ish bo‘yicha ish yuritishni davom ettirish imkoniyati va jinoyat protsessi ishtirokchilarining huquqlarini ta’minlashga qaratilgan faoliyat natijasidir" deb aytgan. Boshqa tomondan, "ish yuritishni to‘xtatib turish" atamasi jinoyat protsessining bir necha bosqichlarini qamrab oladi: xususan dastlabki tergov, ishni sudga tayyorlash, sud muhokamasi. Bu jinoiy ishning bir bosqichdan ikkinchi bosqichga o‘tishiga qarab to‘xtatib turish asoslarining soni ham, mazmuni ham o‘zgarib turishi bilan izohlanadi, bu haqida quyida to‘xtalib o‘tamiz. Boshqacha qilib aytganda, «jinoyat ishini to‘xtatib turish» «dastlabki tergovni to‘xtatib turish» tushunchasidan kengroqdir. “Dastlabki tergovni to‘xtatib turish” va “jinoyat ishini to‘xtatib turish” tushunchalari o‘rtasidagi munosabat ko‘proq dolzarb bo‘lib tuyuladi.

Jinoyat-protsessual adabiyotlarda dastlabki tergovni to‘xtatib turish tushunchasi va mohiyati masalasi hali ham munozarali. Jinoyat-protsessual huquqining mustaqil instituti sifatida ushbu masala bo‘yicha konsensus shakllantirildi. Mahalliy protsessuallarning aksariyati “to‘xtatib turish” deganda faqatgina ish yuzasidan tanaffusni tushunishadi. Rossiyalik olim A.Stremovskiy esa mazkur holatni tergovdagi tanaffus deb bildirganligini aytib o‘tishimiz lozim. Darhaqiqat, jinoyat ishi yuzasidan dastlabki tergov to‘htatilganidan so‘ng protsessual faoliyat vaqtinchalik tugashiga sabab bo‘ladi, biroq to‘liq protsessual faoliyat tugashini tushunish noto‘g‘ridir. Misol uchun jinoyat ishi to‘htatilganidan so‘ng qidiruv e’lon qilish to‘g‘risida protsessual qaror chiqarish yoki ushlab turish hamda extiyot chorasi tariqasida qamoqni qo‘llanishi mumkin. YUqoridagilarning barchasi protsessual harakatlar sirasiga kiradi.

Shuningdek, jinoyat ishi yurituvi yuzasidan nafaqat protsessual harakatlar balki boshqa harakatlar ham amalga oshiriladi. Xususan tergovni rejalashtirish, tergov harakatlarini o‘tkazishga tayyorgarlik ko‘rish, guvohlar doirasini aniqlash va ularning har birini yashash joylarini aniqlash, jinoyatchini qidirish kerak bo‘lgan shaxslar doirasini aniqlash va xakazo. SHuning uchun surishtiruvchi, tergovchi jinoyat ishi yuzasidan dastlabki tergovni to‘xtatishga olib kelgan holatlarni bartaraf etish maqsadida tashkiliy harakterdagi harakatlarni amalga oshiradi.

Demak, huquqni muhofaza qiluvchi organlarning jinoyat ishini to‘xtatilishiga olib kelgan holatlarni bartaraf etishga qaratilgan protsessual va tashkiliy faoliyati, tadqiq etilayotgan institut uchun juda muhim ahamiyat kasb etadi.

Xulosa. Yuqorida aytilganlarga asoslanib, fikrimizcha, ushbu institutning quyidagi ta’rifini berishimiz mumkin. Dastlabki tergovni to‘xtatib turish - jinoyat protsessual kodeksida nazarda tutilgan asoslar bo‘yicha qonun bilan tartibga solinadigan tergov harakatlarini tegishli tartibda amalga oshirishni majburiy ravishda to‘xtatish hamda tergov va surishtiruv organlarining har biri o‘z vakolatlari doirasida dastlabki tergovni to‘xtatib turishga sabab bo‘lgan va jinoyat ishtirokchilarining huquq va manfaatlarini buzishi mumkin bo‘lgan holatlarni bartaraf etish bo‘yicha faol protsessual choralarni ko‘rish jarayonidir

Bu sohada olimlar tomonidan bildirilgan har bir fikr jinoyat ishi yuzasidan dastlabki tergovni to‘xtatish va jinoyat ishini yuritishdan to‘xtatish institutining u yoki bu hususiyatlarini ifodalagan holda bir-birini to‘ldirib borgan. Natijada bu borada mazkur institutning ahamiyatini belgilovchi umumiy bir ko‘rinish paydo bo‘lishini tavsiflasak mubolag‘a bo‘lmaydi.

Yuqoridagi munozaralarga yondashgan holda, bizningcha, jinoyat ishi yuzasidan dastlabki tergovni to‘xtatish institutining ahamiyati jinoyat ishlarini yuritish muddatlari o‘tishini oldini olish, tergov idoralarida ishlarni samarali tashkil etish va asosiysi jinoyat ishidan manfaatdor bo‘lgan shaxslarning qonuniy manfaatlarini ta’minlashdan iborat.

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ЕРЛАРНИ ТАЛОН-ТОРОЖ ҚИЛИШ ЖИНОЯТЛАРИ БЎЙИЧА ТЕРГОВ ВАЗИЯТЛАРИНИНГ КРИМИНАЛИСТИК ЖИҲАТЛАРИ

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Ўзбекистон Республикасида ер муносабатларида бозор механизмларининг ривожланиб бораётганлиги ўз навбатида аҳоли томонидан ердан фойдаланиш ҳуқуқига эга бўлиш усулларининг ўзгаришига жиддий таъсир кўрсатмоқда. Мамлакатимизда ер ва ердан фойдаланиш соҳасидаги муносабатларга аста-секин бозор тамойилларига эга бўлиб бораётганига қарамасдан, ерларни тасарруф қилиш ва уларга эгалик қилиш борасидаги қонунчилик ҳужжатлари етарлича такомиллаштирилмаган ва қонунчилик асослари билан тўлиқ таъминланмаган. Бунинг оқибатида кўп ҳолларда қонунни қўллаш амалиётида қонунбузилиш ҳолатлари содир қилинмоқда ва ер муносабатлари иштирокчиларининг бир қатор ҳуқуқлари бузилиши кузатилмоқда. Ерларни яширин равишда ноқонуний йўллар билан талон-торож қилиш ҳолатлари ва экин ер майдонларини қурилиш ҳамда бошқа тижорат ва нотижорат мақсадларида сотиб юбориш ҳолатлари ортиб бораётгани мамлакат иқтисодиётига катта зарар етказиши хавфи остида қолмоқда. Хусусан, кичик шаҳарлар ва туманларда томорқа ер майдонлари, турар жойларга туташ бўлган суғориладиган ер майдонлари, боғлар, далалар, давлат заҳирасида турган вақтинча фойдаланилмаётган ер майдонлари ва бошқа шу каби яшил ер майдонлари ноқонуний йўллар орқали эгалик ҳуқуқини эътироф этувчи ҳужжатларсиз бир шахсдан бошқа шахсга сотиб юборилиб талон-торож қилинмоқда.

Хусусан, Ўзбекистон Республикаси Иқтисодиёт ва Молия вазирлиги ҳузуридаги кадастр агентлигининг маълумотига кўра, биргина 2023 йил давомида амалга оширилган ер ва кадастр назорати натижасида 28 636 та ҳолатда 6 259 гектар ер майдонларини ўзбошимчалик билан эгаллаб олиш ҳолатлари аниқланган бўлиб, шундан 16 384 та (3 247,7 гектар, 57,2 фоиз) қонунбузарлик ҳолатлари берилган ёзма кўрсатмалар натижасида ихтиёрий бартараф этилган, 9 484 та (2 617,2 гектар) ҳолатда ўзбошимчалик билан эгалланган ерларни қайтариш ва уларда қурилган иморатларни буздириш бўйича судларга даъво аризалари киритилган, жиноят аломатлари аниқланган 1 014 та ҳолатда (252,7 гектар) тўпланган материаллар прокуратура органларига қонуний қарор қабул қилиш учун киритилган, шу билан бирга кадастр агентлиги ташкилотларига берилган янги ваколатлардан самарали фойдаланган ҳолда 33 233 та ер ва кадастрга оид ҳуқуқбузарлик содир этган шахсларга нисбатан маъмурий жазо чоралари қўлланилган.[1]

Ерга бўлган ҳуқуқнинг хилма-хиллиги принципи Ўзбекистон ер ҳуқуқининг ўзига хослигини тавсифлайдиган принцип бўлиб, ерга давлат мулк ҳуқуқи мавжудлиги шароитида ерни фойдаланиш жараёнига тортишнинг мақбул шаклларини жорий этган. Ер кодексининг 17-моддасига биноан юридик шахслар ерга нисбатан уч хил ҳуқуқ, яъни 1)

[1] https://www.kadastr.uz/uz/boshqa-malumotlar: Ўзбекистон Республикаси Иқтисодиёт Ва Молия Вазирлиги ҳузуридаги Кадастр Агентлиги Ҳайъати Йиғилишининг Баёни, 27.02.2024 йил, № 1/2024, Тошкент ш.

доимий фойдаланиш; 2) мулк ҳуқуқи асосида ва 3) ижара ҳуқуқи асосида ер участкаларига эга бўлишлари кўрсатилган. Шу моддага биноан жисмоний шахслар эса икки хил ҳуқуқ, яъни 1) мулк ва 2) ижарага ҳуқуқи асосида ҳамда чет эллик фуқаролар ва юридик шахслар, фуқаролиги бўлмаган шахслар, чет эл инвестициялари иштирокидаги корхоналар ер участкаларига фақат 1) ижара ҳуқуқи асосида ер участкаларига эга бўлишлари мумкинлиги қайд қилинган.

Юридик ва жисмоний шахслар ўзига доимий фойдаланиш (эгалик қилиш), ижара ёки мерос қилиб қолдириладиган умрбод эгалик қилиш ҳуқуқи асосида тегишли бўлган қишлоқ хўжалигига мўлжалланмаган ер участкаларини қонунчиликда назарда тутилган ҳолларда хусусийлаштиришга ҳақли.

Ўзбекистон Республикасининг Ер кодексига кўра Республика ер фонди ерлардан фойдаланишнинг белгиланган асосий мақсадига кўра 8 та тоифаларга бўлинган.

Ер участкаси — ер фондининг қайд этилган чегарага, майдонга, жойлашиш манзилига, ҳуқуқий режимга ҳамда давлат ер кадастрида акс эттириладиган бошқа хусусиятларига эга бўлган қисмидир. Ер участкасининг чегараси планларда (чизмаларда) қайд этилади ва натурада (жойнинг ўзида) белгиланади. Ер участкасининг майдони натурада (жойнинг ўзида) чегара белгиланганидан кейин аниқланади.

Шунга эътибор қаратишимиз лозимки, ер участкаларига нисбатан мулк, доимий фойдаланиш ва ижара ҳуқуқининг тегишли қонунчилик ҳужжатларида белгиланган тартиб ва талабларига риоя қилинган ҳолда вужудга келган ёки келмаганлигини аниқлаш ерларни талон-торож қилиш билан боғлиқ жиноят ишларини тергов қилиш жараёнидаги муҳим вазифа ҳисобланади.

Қонунчиликка кўра, юридик ва жисмоний шахсларнинг ер участкаларига бўлган мулк ҳуқуқи қишлоқ хўжалигига мўлжалланмаган ер участкалари хусусийлаштирилганда юзага келади.

Ер участкалари вилоят ва Тошкент шаҳар ҳокимининг қарорига асосан давлат органларига, муассасаларига ва корхоналарига, фуқароларнинг ўзини ўзи бошқариш органларига жамоат эҳтиёжлари учун доимий фойдаланишга берилади.

Ер участкасидан доимий фойдаланиш ҳуқуқи белгиланган тартибда давлат рўйхатидан ўтказилганда вужудга келади.

Ер кодексининг 23-моддасида аниқ белгилаб берилганки, ер участкаларини мулк қилиб бериш (реализация қилиш), доимий фойдаланиш учун ва ижарага бериш ер ажратиш тариқасида амалга оширилади.

Ер участкаларини бериш (реализация қилиш) қуйидаги тартибда амалга оширилади:

1) мулк қилиб бериш (реализация қилиш) — қишлоқ хўжалигига мўлжалланмаган ер участкаларини хусусийлаштириш тўғрисидаги қонунчиликка мувофиқ, шу жумладан якка тартибда уй-жой қуриш ҳамда уй-жойни ободонлаштириш, тадбиркорлик, шаҳарсозлик фаолиятини ва қонунчилик билан тақиқланмаган бошқа фаолият турларини амалга ошириш учун электрон онлайн-аукцион воситасида;

2) доимий фойдаланишга бериш — Ер кодекснинг 20-моддасида назарда тутилган ҳолларда вилоятлар ва Тошкент шаҳар ҳокимлари томонидан;

3) ижарага бериш — очиқ электрон танлов ва электрон онлайн-аукцион воситасида, шунингдек Ер кодекснинг 24-моддасида назарда тутилган ҳолларда Ўзбекистон Республикаси Вазирлар Маҳкамаси томонидан.

Хусусий мулк бўлган ер участкасини ижарага бериш унинг мулкдори томонидан амалга оширилади.

Эгаликдаги, фойдаланишдаги, ижарадаги ва мулк қилиб берилган ер участкасини бериш (реализация қилиш) ушбу Кодексда белгиланган тартибда фақат шу ер участкаси белгиланган тартибда олиб қўйилганидан (қайта сотиб олинганидан) ва давлат мулки сифатида давлат рўйхатидан ўтказилганидан кейин амалга оширилади.

Саноат корхоналари, темир йўллар ва автомобиль йўллари, алоқа ва электр ўтказиш линиялари, магистрал трубопроводлар қуриш учун, шунингдек қишлоқ хўжалиги билан боғлиқ бўлмаган бошқа эҳтиёжлар учун қишлоқ хўжалигига мўлжалланмаган ерлар ёки қишлоқ хўжалиги учун яроқсиз бўлган ерлар ёхуд қишлоқ хўжалигининг сифати ёмон ерлари берилади (реализация қилинади). Ўрмон фондига қарашли ерлардан мазкур мақсадлар учун ер участкалари бериш (реализация қилиш) асосан ўрмон билан қопланмаган майдонлар ёки бута ва арзонбаҳо дов-дарахтлар билан қопланган майдонлар ҳисобидан амалга оширилади.

Берилган (реализация қилинган) ер участкасининг чегаралари Ўзбекистон Республикаси Давлат солиқ қўмитаси ҳузуридаги Кадастр агентлигининг Давлат кадастрлари палатаси томонидан натурада (жойнинг ўзида) белгилангунига ҳамда ер участкасига бўлган ҳуқуқни тасдиқлайдиган ҳужжатлар берилгунига қадар мазкур ер участкасига эгалик қилиш ва ундан фойдаланишга киришиш тақиқланади.

Ер участкаларини мулк қилиб бериш (реализация қилиш), улардан доимий фойдаланиш ва уларни ижарага бериш тартиби Ўзбекистон Республикаси Вазирлар Маҳкамаси томонидан белгиланади.

Ер участкасидан фойдаланиш ҳуқуқи олди-сотди, ҳадя, айирбошлаш, ижара, гаров ва бошқа битимларнинг предмети ҳисобланади ва мерос ёки ҳуқуқий ворислик тартиби асосида бир шахсдан бошқа шахсга ўтиши мумкин Ер участкасини бошқа шахсга ўтказиш тартибини белгиловчи нормаларнинг мураккаблиги, фуқароларда ерга эгалик қилиш ҳуқуқини қўллашда қийинчиликларни юзага келтиради, бу эса ўз навбатида ер муносабатлари соҳасидаги жиноятларни турли усуллар билан содир этиш учун қулай шарт-шароит яратилишига замин бўлади.

Криминалист олим А.М.Кустовнинг фикрига кўра, жиноятларни содир этиш усули ҳақидаги маълумотлар воқеа-ҳодиса ва унинг иштирокчилари тўғрисидаги кўплаб маълумотларни ўз ичига қамраб олиши лозим, бу эса “жиноий фаолият” тизимида асосий элементлар ҳисобланади.[2]

Мавжуд ёндашувларни қўллаган ҳолда, ерларни талон-торож қилиш ва ер соҳасида содир қилинаётган жиноятларнинг таркибий қисмларини қуйидагича бўлишимиз мумкин:

- ҳаракатларнинг изчил (кетма-кетлик) алгоритми;

- жиноятга тайёргарлик кўриш, уни содир этиш ва жиноятни яширишда ифодаланган бир-бирига боғлиқ бўлган ҳаракатлар кетма-кетлиги;

- ғараз ниятни амалга оширишга қаратилганлиги.

Тергов амалиёти ва жиноят ишлари материалларини ўрганиш асносида ер муносабатлари соҳасидаги жиноятларни содир қилиш усулларини тизимлаштириш ва уларни содир қилиш оралиқларини (тезлигини) аниқлашга имкон беради.

[2] Кустов А.М. Криминалистика и механизм преступления. Цикл лекций. М., 2002. С. 117.

Ерларни талон-торож қилиш билан боғлиқ жиноятларни тергов қилишнинг илк босқичи жиноят ишини қўзғатиш билан бошланади.

Жиноят ишини қўзғатиш - жиноят процессининг дастлабки босқичи ҳисобланиб, ундан қўзланган мақсад - жиноятларни тергов қилиш жараёнига киришиш ва тўлиқ тартибда жиноят-процессуал ҳаракатларни ўтказиш, шу жумладан тегишли мажбурлов чораларини қўллаш учун ҳуқуқий асослар мавжудлигини аниқлашдан иборатдир.[3]

Жиноят ишини қўзғатиш масалалари бўйича хориж криминалист ва ҳуқуқшунос олимлариидан Р.С.Белкин, Э.Р.Россинская, В.В.Степанов, А.Д.Соловев ва бошқалар илмий тадқиқотлар олиб боришган. Уларнинг илмий ишларида дастлабки терговга киришишдан олдин жиноий ҳодисага алоқадор маълумотларни тўплаш, тезкор-қидирув фаолияти натижаларидан фойдаланиш, жиноят ҳақида ариза ва хабарларни текшириш жараёнида процессуал ҳаракатларни тўғри ташкиллаштириш, “керакли маълумотларни аниқлаш” ва “далилларни тўплаш” тушунчаларининг ўзаро боғлиқлиги ва шу каби бошқа масалалар турли илмий ёндошувлар асосида таҳлил қилинган.

Бир қатор криминалист олимлар жиноят ишини қўзғатиш босқичи билан бевосита боғлиқ бўлган процессуал масалалар криминалистика соҳасининг предметини ташкил қилмаслигини ва бу босқич криминалистик тергов услубиятининг таркибий элементи бўла олмаслигини таъкидлашса-да, бироқ ер муносабатлари ва ерларни талон-торож қилиш билан боғлиқ жиноятларни тергов қилиш услубиятига нисбатан мазкур элемент жуда муҳим ва жиноят тўғрисидаги аризани текшириш жараёнида терговчининг процессуал ҳужжатлар билан ишлаш жараёнида намоён бўлади. Дастлабки тергов вазиятлари терговчида содир этилган жиноят ҳолатлари бўйича версияларни ишлаб чиқиш ва илк босқичда дастлабки тергов режасини тузиш имкониятини шакллантиради.

Ер муносабатлари соҳасидаги турли хил жиноят турлари, жумладан, фирибгарлик, ер билан боғлиқ ноқонуний битимларни тузиш ва рўйхатдан ўтказиш, мансаб ваколатларини суиистеъмол қилиш, ер участкасини ноқонуний тартибда бериш ва ажратиш, ерларни ўзбошимчалик билан эгаллаб ноқонуний қурилиш ишларини бажариш, шу каби бошқа коррупциявий жиноятлар ҳозирги кунда кўплаб содир этилаётган жиноят турлари ҳисобланиб, улар бўйича аксарият ҳолларда жиноят ишини қўзғатиш учун зарур ва етарли бўладиган криминалистик аҳамиятга эга бўлган маълумотларни олиш бир мунча мураккабликларни юзага келтиради. Бунинг ўзига хос хусусият шундаки, дастлабки терговга таъсир кўрсатиши мумкин бўлган бир қанча тўсиқлар, ер муносабатлари соҳасидаги жиноятларни фош этиш ва тергов қилишга таъсир кўрсатувчи кўплаб ҳолатларнинг мавжуд бўлиб, улар ўз навбатида турли усуллар орқали жиноятларни тергов қилиш жараёнини қийинлаштириши мумкин. Бундай ҳолларда ҳуқуқни муҳофаза қилувчи органиларнинг асосий вазифаси жиноят ишини қўзғатиш босқичи ва дастлабки тергов жараёнида юзага келиши мумкин бўлган хатоларга йўл қўймаслик, хусусан, далиллар тўплаш бўйича тергов ҳаракатларини тўғри режалаштириш ва тергов билан боғлиқ мақбул жиноят-процессуал қарорларни қабул қилишдан иборатдир.

[3] Москалькова Т. Н. Глава 19. Поводы и основание для возбуждения уголовного дела // Научно-практический комментарий к Уголовно-процессуальному кодексу Российской Федерации (постатейный) / под ред. В. М. Лебедева, В. П. Божьева. 3-е изд., перераб. и доп. М., 2007.

Шунга мувофиқ, ерга оид жиноятларни тергов қилиш жараёнини бошлашдан олдин дастлабки тергов версия ва вазиятларни, дастлабки келиб тушган ёки тўпланган маълумотларни ва терговга қадар текширув ҳаракатлари натижаларини пухта таҳлил қилиш мақсадга мувофиқ ҳисобланиб, шундан сўнггина дастлабки терговнинг бутун жараёнини режалаштириш лозим бўлади.

Терговни режалаштириш умумий ва хусусий версияларни кўрсатиш, тергов вазифаларини аниқлаштириш, уларни ҳал этиш усулларини тизимлаштириш мақсадида зарур бўлиб, бу режалаштириш принсипларига мувофиқ амалга оширилади.

Криминалист олим С.Н.Казинскаянинг таъкидлашича, дастлабки тергов режасини тузиш умумий ва хусусий версияларни илгари суриш, тергов вазифаларини аниқлаштириш, уларни ҳал қилиш усулларини тизимлаштириш учун зарур босқич бўлиб, бу режалаштириш тамойилларига таянган ҳолда амалга оширилади.[4]

Криминалистик нуқтайи назардан тергов вазиятининг турли талқиндаги тушунчалари илгари сурилган. Олимлар тергов учун муҳим аҳамиятга эга бўлган элементларнинг хусусиятларига қараб, тергов вазияти тушунчасига ўз муаллифлик таърифларини беришади.

Хусусан, криминалист тадқиқотчилар А.И.Обирин ва Д.Д.Каплунларнинг таъкидлашича, тергов вазияти - бу терговчи томонидан қуйидаги элементлар мавжуд бўлган ишончли маълумотларни аниқлаш тизими: исботлаш аҳамиятга эга бўлган, жиноят тўғрисида хабарни тавсифловчи ва ҳақиқатни аниқлашга асосланган жиноят фактлари ва унинг юзага келиш шарт-шароитлари.[5]

А.Н. Колесниченко ўзининг докторлик диссертациясида тергов вазиятини қуйидагича таърифлайди: “Тергов вазияти бу - жиноятларни тергов қилишда маълум бир вазият бўлиб, у аниқ далиллар ва ахборот материалларининг мавжудлиги, шунингдек уларни тўплаш ва текширишнинг аниқ вазифалари билан тавсифланади”.[6]

Олинган ва тўпланган криминалистик аҳамиятга эга маълумотларнинг ҳажми, табиати ва аниқлик даражасига қараб тергов вазиятлари иккита асосий гуруҳга ажратиш мумкин: оддий ва мураккаб тергов вазиятлари.[7]

Ерларни талон-торож қилиш билан боғлиқ ноқонуний битимлар тузиш ва рўйхатга олиш, мансаб ваколатларини суиистеъмол қилиш, ер участкасини ноқонуний ажратиб бериш, шунингдек, ер муносабатлари соҳасида содир этиладиган бошқа коррупциявий жиноят ишлари бўйича оддий тергов вазиятлари катта ҳажмдаги маълумотларни ўз ичига олади.

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[4] Казинская С.Н. Методика расследования мошенничества в сфере потребительского рынка в отношении предпринимателей: монография. – М.: Юрлит-информ, 2016. С. 96.

[5] Обирин А.И,, Каплун Д.Д. Следственная ситуация как система // вестник тихоокеанского государственного унверситета. 2014. № 1 (32). С. 271 – 274.

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[7] Александр И.В. Криминалистическая методика: учеб. пособие для бакалавров. – М.: Юрлитинформ, 2014. С. 98.

Мураккаб тергов вазиятлари исботлаш учун далиллар ва шарт-шароитлар етарли бўлмаганда, шунингдек, гумонланувчи ёки бошқа шахслар томонидан тергов жараёнига тўсқинликлар қилинганида юзага келиши мумкин.

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ЖИНОЯТ ПРОЦЕССУАЛ МУДДАТЛАР: НАЗАРИЯ ВА АМАЛИЁТ

РАШИДОВ НОДИР НОРМУРОД ЎҒЛИ

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Аннотация: *Мазкур мақолада жиноят процессуал муддатлар институтининг таснифланишига ҳозирги кунда алоҳида эътибор қаратиш яъни; иш юритиш босқичига бевосита боғлиқ бўлган муддатлар ёки эҳтиёт чоралари билан боғлиқ бўлган муддатлар буларнинг барчасини бир ягона тизимга бирлаштирган ҳолатда ўрганишни йўлга қўйиш чора-тадбирларини йўлга қўйиш, илмий асослаш.*

Калит сўзлар: *жиноят процессуал муддатлар, жиноят, процессуал муддатлар, терговга қадар текширув, дастлабки тергов, процессуал ҳаракатлар, жиноят процесси иштирокчилари.*

Аннотация: *В данной статье особое внимание теперь уделено классификации института уголовно-процессуальных сроков, т.е. сроки, непосредственно связанные со стадией судебного разбирательства, или сроки, связанные с мерами пресечения, в случае объединения всех их в единую систему установления мер по установлению познания, научного обоснования.*

Ключевые слова: *уголовно-процессуальные сроки, преступление, процессуальные сроки, предследственное расследование, предварительное следствие, процессуальные действия, участники уголовного процесса.*

Abstract: *In this article, special attention is now paid to the classification of the institution of criminal procedural terms, that is; deadlines directly related to the stage of proceedings or deadlines related to precautionary measures, in the case of combining all these into a single system, establishing measures to establish learning, scientific justification.*

Key words: *criminal procedural terms, crime, procedural terms, investigation prior to investigation, preliminary investigation, procedural actions, participants in criminal proceedings.*

Давлатимиз ўз мустақиллигини эълон қилганидан сўнг, инсонпарвар демократик ҳуқуқий давлат ва кучли фуқаролик жамиятини барпо этишни мақсад қилди ва бу йўлда мамлакатимизни шакллантиришнинг ўзига хос йўлини танлади. Ўзбекистон Республикасининг Президенти Шавкат Мирзиёев томонидан мамлакатимизда бир қанча мухим ўзгаришлар амалга оширилди. Олиб борилаётган ушбу ислоҳотларнинг асосий мақсади давлатимизда қонун устуворлигини таьминлаш, ҳуқуқий демократик давлатнинг муҳим белгиларидан бири бўлган инсон ҳуқуқларини ҳимоя қилишга қаратилганлиги эътиборга лойиқдир. Республикамизда жиноят процесси иштирокчиларининг ҳуқуқлари ва қонуний манфаатлари ҳимоя қилинишига оид кафолатларни кучайтириш, жиноят ишларини юритишнинг самарали механизмларини ишлаб чиқиш, жумладан соддалаштирилган тартибда иш юритилишини йўлга қўйишга қаратилган ислоҳотлар амалга оширилмоқда.

Сўнгги 8 йил ичида Ўзбкистонда амалга оширилган ҳуқуқий ислоҳатлар доирасида жиноий одил судловни такомиллаштиришга катта аҳамият берилмоқда. Мамлакатимизда шахс манфаатлари, фуқароларнинг мавқеини ҳуқуқий тартибга солиш соҳасида суд ишларини юритиш ва шахс ҳуқуқларига риоя қилиш ва самарадорлигини ошириш муаммолари юқори ўринлардан бирини эгаллайди.

Суд-ҳуқуқ ислоҳотларида жиноят процессуал қонунчилигини изчил такомиллаштириш, судгача ва суд босқичларида жиноят иши оқилона тезликда юритилишини таъминлаш, пировард натижада инсон ҳуқуқ ва қонуний манфаатлари ўз вақтида тикланиши ва тўла ҳимояланишига эришишга алоҳида аҳамият берилмоқда. Бугунги кугда одил судловнинг сифати ва тезкорлигини оширишга қаратилган кенг кўламли чора-тадбирлар изчил амалга оширилмоқда[8]. Юртимизда фуқароларнинг ҳуқуқ ва қонуний манфаатларини янада тўлароқ тартибга солиш мақсадида жиноят-процессуал қонуни ҳар бир процессуал хатти-харакатни муайян муддатлар билан тартибга солган хамда уларни шу муддатлар билан чегаралаб кўйган. Конун томонидан белгиланган ушбу муддатларнинг катъий белгиланиши фукароларнинг хуқуқ ва қонуний манфаатларини таъминланишини гарови булиб ҳисобланади. Бироқ, жиноят- процессуал қонунчилиги томонидан суд, прокуратура, тергов, суриштирув органларининг фаолиятини ҳаддан зиёд муддатлар билан чегаралаб қўйилиши, уларнинг жиноят процессидаги функцияларини аниқ ифода этишга йул қўймайди (масалан: дастлабки тергов муддатининг қисқартирилиши айрим жиноят ишларининг тўла очилишига тўсик бўлиши мумкин.). Шу сабабли ҳам жиноят процессуал қонунчилигимизда ислоҳатлар ҳам шиддат билан амалга оширилмоқда.

БМТнинг 1948 йилда қабул қилинган Инсон ҳуқуқлари умумжаҳон декларациясининг 8-моддасида “Ҳар бир инсон унга Конституция ёки қонун орқали берилган асосий ҳуқуқлари бузилган ҳолларда нуфузли миллий судлар томонидан бу ҳуқуқларнинг самарали тикланиши ҳуқуқига эга”; 1966 йилда қабул қилинган Фуқаролик ва сиёсий ҳуқуқлар тўғрисида Халқаро пактнинг 9-моддасида “Айбланаётган шахс оқилона муддат ичида иши судда кўрилиши ёки озод қилиб юборилиш ҳуқуқига эга”; 1989 йилда қабул қилинган Бола ҳуқуқлари тўғрисида конвенцияси 37-моддасининг б-бандида “Болани ушлаб туриш, ҳибсга олиш ёки қамоқда сақлаш фақат ноилож чора сифатида ва мумкин қадар қисқа вақт мобайнида ишлатилиши” [9]нинг кафолатинишини жиноят процессида тўла таъминлаш устувор вазифа саналиши белгилаб қўйилди. Шу сабабли ҳам жиноят процессуал муддатларни ўрганиб таҳлил қилиш ўрганиш лозим.

Демак, плюрализимнинг бир қанча ижобий жиҳатлари мавжуд бўлиб у энг аввало, шахсларни фикр юритилаётган мавзуда ҳар тарафлама ўйлаб кўришликка мажбур қилади. Жамиятимизда деярли ҳар бир соҳада плюрализмни кўришимиз мумкин. Фикрларни ҳилма хиллигига асосланиши Конституциямизда белгилаб қўйилган. Жиноят процессуал муддатлар ҳам ўзига хос хусусиятларга эга бўлиб, уларни таснифлаш жиноят процессуал

[1] Каримов И.А. Мамлакатимизда демократик ислоҳотларни янада чуқурлаштириш ва фуқаролик жамиятини ривожлантириш концепцияси. –Тошкент: Ўзбекистон, 2010. –Б. 18.

[9] Инсон ҳуқуқлари бўйича халқаро шартномалар. –Тошкент. “Адолат”, 2004. –Б. 32, 40, 234.

ҳуқуқи назариясининг муҳим масалаларидан биридир. Таснифлаш, фанда мазкур муаммони ўрганишни тизимга ва тартибга солибгина қолмасдан, ўрганишнинг тўлиқлиги ва чиқарилган хулосаларнинг тўғрилигини белгилаб берувчи усул саналади. Жиноят процессуал муддатлар мазмун ва моҳиятига кўра хилма-хил бўлиб, юридик адабиётларда уларнинг турлича таснифлари келтирилади.

Жумладан, жиноят процессуал муддатларнинг кафолат йўналишига қараб, қуйидаги таснифи эътироф этилади:

- дастлабки тергов ва суд муҳокамасининг тезлигини кафолатлайдиган муддатлар;
- процесс иштирокчиларининг ҳуқуқлари ва қонуний манфаатларини кафолатлайдиган муддатлар;
- дастлабки терговда қонунларга риоя этилиши устидан прокурор назоратининг амалга оширилишини кафолатлайдиган муддатлар[10].

Мазкур таснифни жиноят процессининг дастлабки босқичлари бўлган жиноят иши қўзғатиш ва суриштирувга оид муддатлар билан тўлдириш, шунингдек, 2008 йил 1 январдан кучга кирган “Қамоққа олишга санкция бериш ҳуқуқини судларга ўтказилиши муносабати билан Ўзбекистон Республикасининг айрим қонун ҳужжатларига ўзгартиш ва қўшимчалар киритиш тўғрисида”ги қонунга асосан, дастлабки терговда суд назоратини кафолатловчи ҳамда Жиноят-процессуал кодексига 2010 йил 28 сентябрда киритилган ўзгартиш ва қўшимчаларга мувофиқ, жиноят суд ишларини юритиш соҳасидаги халқаро ҳамкорликка оид муддатларни ҳам алоҳида таснифда ифодалаш зарур.

Жиноят процессуал муддатлар таснифининг:

- биринчи қисмига ариза, хабар ва бошқа маълумотларни кўриб чиқиш тартиби билан боғлиқ муддатларни;
- иккинчи қисмига суриштирув юритиш муддати, дастлабки терговни олиб бориш, терговчининг топшириғини бажариш, жиноят ишини айблов хулосаси (далолатномаси) билан прокурорга юбориш, айблов хулосаси (далолатномаси) билан келган жиноят иши юзасидан прокурорнинг қарори, жиноят ишини судловга тегишлилигига кўра ўтказиш, жиноят ишини суд муҳокамасига тайинлаш, суд мажлисида жиноят ишини муҳокама қилиш муддати, шунингдек ҳукм қилинган ва оқланган шахсга ҳукм нусхасини топшириш каби муддатларни;
- учинчи қисмига мурдани эксгумация қилиш, почта-телеграф жўнатмаларини хатлаб қўйиш, телефон ва бошқа сўзлашув қурилмалари орқали олиб бориладиган сўзлашувларни эшитиб туриш, жиноят ишини иш қўзғатилганидан кейин юбориш, жиноят ишини қўзғатишнинг қонунийлиги устидан прокурор назорати, дастлабки терговни тўхтатиш, суриштирувни тўхтатиш, тўхтатилган жиноят иши бўйича терговни қайта тиклаш, жиноят ишини судга юбориш билан боғлиқ муддатларни;
- тўртинчи қисмига қамоққа олиш тарзидаги эҳтиёт чорасини қўллаш тартиби, қамоқда сақлаш жойлари, қамоқда сақлаб туриш билан боғлиқ муддатларни;
- бешинчи қисмига Ўзбекистон Республикаси ҳудудида бўлган шахсни ушлаб бериш тўғрисидаги қарор устидан шикоят қилиш, Ўзбекистон Республикаси ҳудудида бўлган шахсни ушлаб беришни кечиктириш ва вақтинча ушлаб бериш, Ўзбекистон Республикаси ҳудудида бўлган шахсни ушлаб бериш учун ушлаб туриш ва қамоққа олиш,

[10] Жиноят процесси (Уумумий қисм): Дарслик. Муаллифлар жамоаси. –Т., 2002. –Б. 367-368.

Ўзбекистон Республикаси ҳудудида ушлаб турилган ёки қамоққа олинган шахсни озод қилиш, Ўзбекистон Республикаси ҳудудида бўлган ушлаб бериладиган шахсни топшириш каби муддатларни киритиш мумкин.

Айрим хорижий ҳуқуқшунослар, жиноят процессуал муддатларни қуйидагича таснифда ифодалашни назарда тутишади:

1) тергов ва судда процессуал ҳаракатларни амалга ошириш (суриштирув юритиш; суд мажлисида жиноят ишини муҳокама қилиш каби) муддатларини; Бунда кўплаб асосан англо-саксон ҳуқуқ оиласига тегишли ҳуқуқий давлатларнинг қонунчилигида терговга қадар текширув институти бўлмаганлиги туфайли терговга қадар текширув муддатлаари киритлмасдан қолган. Бироқ, бизнинг амамлиёт бугунги кунда айнан терговга қадар текширув муддатларида бир қанча муамоларга дуч келинмоқда вва бунинг ўз навбатиида объектив ва субъектив омиллари маввжудлигиидандир. Шу боисдан, амалдаги жиноят процессуал қонунчилиггимиздаги терговга қадар текширув муддатларини (ЖПК 329-моддаси) ўрганиб чиқилса мақсадга мувофиқ бўлади деган фикрдаман.

2) процессуал қарорларни қабул қилиш (прокурор ёки унинг ўринбосари айблов хулосаси ёки далолатномаси билан келган жиноят ишини кўриб чиқиши ва қарор қабул қилиши каби) муддатларни;

3) процессуал мажбурлов чораларини қўллаш (ушлаб туриш) муддатларини;

4) ариза, илтимос ва шикоятлар бериш муддатлари[11].

Ушбу тасниф, бизнингча, назарий жиҳатдан ўринли бўлсада, амалий нуқтаи-назардан анча ноқулай. У процессуал муддатнинг моҳияти ҳақида аниқ тасаввур ҳосил қилиш имконини бермайди.

Баъзи тадқиқотчилар, жиноят процессида муддатларни ифодалаш усулига кўра қуйидагича таснифлашни маъқуллайдилар:

1) вақт оралиғи (соат, сутка, ойлар) билан ҳисобланадиган муддатлар;

2) календар санани назарда тутувчи муддатлар (масалан, суд ишни муҳокама қилишни аниқ календар санани кўрсатган ҳолда кейинга қолдиради);

3) юридик фактни назарда тутувчи муддатлар (масалан, иш бўйича дастлабки терговнинг айбланувчи соғайгунга қадар тўхтатилиши)[12].

Юридик адабиётларда жиноят процессуал муддатларни таснифлаш бўйича бошқа таклифлар ҳам мавжуд. Жумладан, жиноят процессуал муддатларни аниқ ифода этиш даражасига кўра процессуал меъёрларнинг ўзи ҳам қуйидаги уч турга бўлинади:

процессуал ҳаракатни *зудлик билан* амалга оширишни назарда тутадиган қонун меъёрлари (масалан, ЖПКнинг 225-моддасига кўра, ушлаб туриш, жиноят иши қўзғатиш, ишда гумон қилинувчи тариқасида иштирок этишга жалб қилиш тўғрисидаги қарорлар гумон қилинувчига дарҳол эълон қилинади);

аниқ муддатлар белгилайдиган қонун меъёрлари (масалан, ЖПКнинг 497^4-моддасига биноан**,** апелляция шикояти ва протестлари ҳукм эълон қилинган кундан эътиборан йигирма сутка ичида, маҳкум, оқланган шахс, жабрланувчи томонидан эса, уларга ҳукмнинг кўчирма нусхаси топширилган кундан эътиборан шу муддат ичида берилиши мумкин;

[11] Матушевский Р.Г. Уголовно-процессуальное право: Пособие. –М.: Приор-издат, 2005. –С 177.

[12] Калиновский К.Б. Процессуальные сроки в уголовном судопроизводстве и их регламентация по УПК РФ // Ленинградский юридический журнал, 2005. -№2(3). –С. 139-145.

муайян процессуал ҳаракатлар *умумий муддатлар* давомида содир этилишига рухсат берадиган қонун меъёрлари[13] (масалан, ЖПКнинг 333-моддасига биноан, 83-модданинг 1 ва 2-бандларида ҳамда 84-модданинг биринчи қисмида назарда тутилган ҳолатлар аниқланган тақдирда, жиноят ишини қўзғатишни рад қилиш тўғрисида суриштирувчи, терговчи ёки прокурор қарор, суд эса ажрим чиқаради).

Бундан ташқари, жиноят процессуал муддатларни ҳуқуқларни амалга ошириш ҳамда илтимосларни бажариш (ЖПКнинг 120-моддасига кўра, гувоҳ ёки жабрланувчи кўрсатув беришга хоҳиш билдирса, улар қоида тариқасида ўша куннинг ўзида ёки кейинги кундан кечиктирмай сўроқ қилиниши)га қаратилган муддатларга ажратиш мумкин. Аммо, бизнингча, ҳар бир муддат замирида ҳуқуқ ва мажбурият мужассам бўлганлиги боис, мазкур асосга кўра муддатларни таснифлашга ҳожат йўқ.

Яна бир гуруҳ муддатлар мавжуд бўлиб, улар назарий жиҳатдан қуйидаги турларга бўлинади: ҳуқуқий тартибга солиниш манбаига кўра:

- Ўзбекистон Республикаси Конституциясида (26-моддасига биноан, жиноят содир этишда айбланаётган ҳар бир шахснинг айбдорлиги судда қонунда назарда тутилган тартибда исботлангунга қадар айбсиз ҳисобланиши; ушлаб туриш муддатини 48 соатдан ошмаслиги лозимлигини Конституцияга киритиш таклифи ҳам берилган бўлиб, агарда уушбу таклиф халқимиз томонидан мақулланадиган бўлса ушбуу норма ҳам ккиритилади.);
- Ўзбекистон Республикаси ЖПКда белгиланган муддатлар (Ўзбекистон Республикаси ЖПКнинг 314-317 моддаси)

Бизнинг фикримизча, жиноят процессуал муддатларни тартибга солиш услубига кўра икки катта гуруҳга:

- даврий муддатлар;
- дарҳол муддатларга бўлиш мақсадга мувофиқдир. Мазкур тасниф тури кўпгина хорижий мамлакатларнинг жиноят процессуал қонунчилигида амал қилади.

Таъкидлаш лозимки, жиноят процессуал муддатларнинг аксарияти даврий муддатлардир. Бундай муддатлар процесс иштирокчилари томонидан у ёки бу процессуал ҳаракатни муайян муддат давомида амалга оширилишини назарда тутади. Шунга кўра, улар қуйидагича:

- аниқ;
- нисбатан ноаниқ турларга ажратилади.

Жумладан биринчисига муайян соат, сутка, ой ичида бажаришни кўзда тутган муддатларни, иккинчисига бажаришнинг давомийлиги маълум муддатдан – маълум муддатгача чегараланиши ёрдамида белгиланадиган муддатларни киритиш мумкин (масалан, ЖПКнинг 179-моддасига кўра, гумон қилинувчи, айбланувчи, судланувчи экспертиза ўтказилгунга қадар экспертиза тайинлаш тўғрисидаги қарор ёки ажрим билан таништирилиши лозим).

Дарҳол муддатлар эса, муайян процессуал ҳаракатларнинг имкон қадар тезроқ (бир соат мобайнида[14]) амалга оширилиши ва бир қатор процессуал ҳаракатлар узлуксизлик,

[13] Жиноят процесси (Уумумий қисм): Дарслик. Муаллифлар жамоаси. –Т., 2002. –Б. 366-367.

[14] Ўзбекистон Республикаси Олий суди Раёсатининг 2003 йил 15 июлдаги қарори билан тасдиқланган “Жиноят ишлари бўйича туман (шаҳар) судларида иш юритиш тартиби тўғрисида”ги Йўриқноманинг 3.11.-банди.

кетма-кетликни таъминлаш мақсадида ушбу ҳаракатлар бажарилишини муайян давр билан эмас, балки юридик факт билан боғлайди. Масалан, ЖПКнинг 110-моддасига асосан, шахсга айб эълон қилингандан сўнг (юридик факт), у дарҳол сўроқ қилиниши (процессуал ҳаракат) лозим.

Шунингдек, жиноят процессуал муддатларни мазмунига кўра: қатъий, муқобил ва шартли муддатларга бўлиш мумкин.

Қатъий муддатлар – процессуал ҳаракатнинг қонунда белгиланган муддат давомида амалга оширилиши лозимлиги (ўн сутка ичида апелляция шикояти ёки протести келтирилиши ва б.)ни англатади;

Муқобил муддатлар – жиноят ҳақидаги ариза, хабар ва маълумотларни кўриб чиқиш дарҳол, ўн сутка ёки бир ой; ишни судда кўриш учун тайинлаш 7 (10) сутка тарзида белгиланган;

Шартли муддатлар – қатъий бўлсада, баъзи ҳолларда қонунда белгиланган тартибда узайтиришга йўл қўйилиши мумкин (масалан, суриштирув, дастлабки тергов, суд муҳокамаси ва қамоқда сақлаш муддатлари ва б.).

Жиноят процессуал муддатларни уларнинг вазифасига кўра, муайян ҳаракатларни амалга оширишга (масалан, ЖПКнинг 385, 395-моддаларига асосан, прокурор беш сутка ичида айблов хулосасини кўриб чиқиши; судья етти (ўн) сутка ичида ишни судда кўриш учун тайинлаш масаласини ҳал этиши) ёхуд ҳаракатни амалга оширишдан сақланишга қаратилган (масалан, тергов тўхтатилганидан сўнг, қайта тиклангунга қадар тергов ҳаракатларини ўтказишга йўл қўйилмаслиги) муддатларга бўлиш мумкин.

Бундан ташқари, жиноят процессуал муддатларни уларнинг мақсадига кўра:

1) жиноят ишини юритишга масъул шахслар фаолиятини ташкиллаштиришга қаратилган;

2) тарафларнинг ҳуқуқ ва қонуний манфаатларини таъминлашга қаратилган муддатларга ажратиш[15] мақсадга мувофиқдир.

Жиноят процессуал муддатларни субъектга тааллуқлигига кўра ҳам:

1) жиноят ишини юритишга масъул шахслар учун белгиланган;

2) процесснинг бошқа иштирокчилари учун белгиланган жиноят процессуал муддатларга таснифлаш мумкин.

Жиногят процессуал қонунчилигида эҳтиёт чоралари билан боғлиқ муддаатларни ҳам туурли хил таснифлашимиз мумкин. Муддатларни биз назаарий жиҳатдан кўплаб турларга ажртишимиз мумккин. Бироқ амалиёт учун фойдаси тегмаса бу ҳеч кимга кераксиз билимга айланади. Умумий қилиб хулоса сифатида айтадиган бўлсам муддатларнинг ҳар бирининг замирида инсонларнинг ҳуқуқ ва эркинликлари ётади.

Мазкур таснифлаш тизими жиноят процессуал муддатлар моҳияти хусусида аниқ тасаввурга эга бўлиш ҳамда барча муддат турлари, белги ва хусусиятларини тўла англаш имконини беради. Таснифнинг қуйида тўлиқ равишда берилиши жиноят процессуал қонунчилигида жиноят процессуал муддатларнинг оптимал тизимини яратишга хизмат қилади.

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MIOKARD INFARKTI BO'LGAN BEMORLARDA QON ZARDOBIDAGI MATRITSALI METALLOPROTEINAZA DARAJASINING DINAMIKASI VA KORRELYATSIYASI

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Annotatsiya. *"ST segmenti ko'tarilgan miokard infarkti bo'lgan bemorlarda matritsa metalloproteinaza darajasining dinamikasi va o'zaro bog'liqligi" ST segmenti balandligi miokard infarkti bo'lgan bemorlarning qonida matritsa metalloproteinazalari (MMP) kontsentratsiyasining o'zgarishini o'rganishni nazarda tutadi. Bu infarkt boshlanganidan beri vaqt o'tishi bilan MMP darajalarining evolyutsiyasini baholashni va bu darajalarning qondagi glyukoza, diabetik kompensatsiya va boshqa xavf omillari yoki asoratlari kabi klinik ko'rsatkichlar bilan bog'liqligini tahlil qilishni o'z ichiga olishi mumkin. Ushbu tadqiqot MMP darajalari va kasallikning rivojlanishi o'rtasidagi mumkin bo'lgan munosabatlarni, shuningdek, MIST ko'tarilishi bilan og'rigan bemorlarda tashxis, prognoz va davolash samaradorligini baholash uchun biomarkerlar sifatida potentsial qiymatini aniqlashga qaratilgan.*

Rivojlangan mamlakatlarda so'nggi yillarda yurak-qon tomir kasalliklaridan (YuQTK) o'lim va nogironlik kamaygan bo'lsa-da, yurak-qon tomir kasalliklari (YuQTK) hali ham kasallanish statistikasida umumiy muammo bo'lib qolmoqda. 2-toifa diabet (YuQTK) bilan og'rigan bemorlarda miyokard infarkti (MI), insult va to'satdan yurak o'limi kabi yurak-qon tomir asoratlari xavfi ortishi ma'lum. O'tkir koronar sindrom (O'KS) bo'lgan bemorlarning taxminan 20-25 foizida QD2tipi ham mavjud. Bunday bemorlarda erta va kechroq o'lim yoki takroriy miyokard infarkti kabi noxush oqibatlar xavfi ortadi.

Oldingi tadqiqotlar shuni ko'rsatdiki, O'KS va QD2tipi bilan og'rigan bemorlarda matritsali metalloproteinazalarning to'qimalar inhibitorlerining faolligi pasayadi, bu esa asoratlarning yuqori xavfi bilan bog'liq. YuQT diagnostikasi va davolash uchun yangi biomarkerlardan foydalanish faol ravishda o'rganilmoqda, bu esa ushbu kasalliklarning rivojlanish mexanizmlarini yaxshiroq tushunishga yordam beradi. Biroq, yangi usullarning imkoniyatlariga qaramay, ularning klinik qo'llanilishi cheklangan.

QD2tipi bilan og'rigan bemorlar uchun yangi terapevtik yondashuvlar o'rganilmoqda, ular qon tomir devoridagi yallig'lanishni kamaytirishga va qonda yallig'lanish belgilari va matritsali metalloproteinazalarning kontsentratsiyasini kamaytirishga qaratilgan. Biroq, QD2tipi ning matritsali metalloproteinazalarning faolligiga ta'siri haqida hali aniq ma'lumotlar yo'q.

Kalit so'zlar: *miokard infarkti, metalloproteanaza, qandli diabet, o'tkir koronar sindrom.*

DYNAMICS AND CORRELATION OF MATRIX METALLOPROTEINASE LEVELS IN SERUM OF PATIENTS WITH MYOCARDIAL INFARCTION

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Abstract. *The title "Dynamics and correlation of serum matrix metalloproteinase levels in patients with ST-segment elevation myocardial infarction" refers to the study of changes in blood matrix metalloproteinase (MMP) concentrations in patients with ST-segment elevation myocardial infarction. This may include assessing the dynamics of MMP levels over time, starting from the onset of infarction, and analyzing the correlation of these levels with clinical parameters such as blood glucose levels, indices of diabetic compensation and other risk factors or complications.*

Such a study aims to reveal possible relationships between MMP levels and the course of the disease, as well as to identify their potential value as biomarkers for diagnosis, prognosis and evaluation of therapy efficacy in patients with STEMI.

Keywords: *Myocardial infarction, metalloproteinases, diabetes mellitus, acute coronary syndrome.*

Maqsad. Ushbu tadqiqot QD2tipi ning mavjudligi yoki yo'qligiga qarab ST segmenti ko'tarilgan MI bo'lgan bemorlarda matritsa metalloproteinaza faolligi va glisemik darajalar o'rtasidagi munosabatni baholashdan iborat edi.

Materiallar va usullar: Tadqiqotga ST segmenti balandligi MI bo'lgan 175 nafar bemor kiritilgan. Ular kasalxonaga yotqizilganidan keyin 48 soat ichida alomatlar paydo bo'ldi. Barcha bemorlar natijalarga ta'sir qilishi mumkin bo'lgan boshqa klinik sharoitlarni istisno qilish uchun tegishli diagnostika muolajalarini o'tkazdilar.

Qon matritsasi metalloproteinaz kontsentratsiyasi va glyukemik darajalari bo'yicha ma'lumotlar to'plangan va tahlil qilingan. Statistik ma'lumotlarni qayta ishlash standart tahlil usullari yordamida amalga oshirildi. Bemorlarning o'rtacha yoshi 61,3 yoshni tashkil etdi, ularning asosiy qismini erkaklar tashkil etdi. Umumiy tibbiy tarixga gipertenziya, angina va yurak etishmovchiligi kiradi.

Jadval 1. MIST ko'tarilishi bilan og'rigan bemorlarning klinik va anamnestik xususiyatlari

Belgilar	Ma'nosi
Erkaklar, n(%)	116 (66,3)
Ayollar, n(%)	59 (33,7)
Yoshi, yillari	62 (33; 87)
Chekish, n (%)	69 (39,2)
2-toifa diabet tarixi, n(%)	34 (19,4)
Semirib ketish (BMI≥30 kg/m2), n (%)	55 (31,4)
Gipertenziya tarixi, n (%)	133 (76,0)
PICS, n (%)	36 (20,6)
Anamnezda angina pektoris, n (%)	94 (53,7)
ONMC, n (%)	15 (8,6)
CHF, n (%)	88 (50,3)
Oldingi lokalizatsiya MI, n (%)	90 (51,4)
LVEF, %	49 (23; 68)
Killip II-IV bo'yicha OCH klassi, n (%)	31 (17,7)

Eslatma: AG - arterial gipertenziya; TVI - tana massasi indeksi; IKKS - infarktdan keyingi kardioskleroz; O'SVB - o'tkir serebrovaskulyar buzilish; SYuYe - surunkali yurak etishmovchiligi; MI - miyokard infarkti; ChQHF - chap qorincha haydalish fraktsiyasi; O'YuYe - o'tkir yurak etishmovchiligi.

Nazorat guruhi ilgari arterial gipertenziya, yurak ishemik kasalligi, qandli diabet yoki boshqa klinik ahamiyatga ega patologiyalardan aziyat chekmagan 59 yoshli (43 yoshdan 68 yoshgacha) 87 nafar sog'lom ko'ngillilardan tuzilgan. Ularning 52 nafari (59,8 foizi) erkaklar va 35 nafari (40,2 foizi) ayollardir. Tadqiqotning barcha ishtirokchilari 2011 yilgi JSST mezonlariga ko'ra 2-toifa

diabet mellitus tashxisi mavjudligi yoki yo'qligiga qarab ikki guruhga bo'lingan. MMP-1, -3 va -9 ning sarum kontsentratsiyasi barcha ishtirokchilarda o'rganildi. 2-toifa STEMI miokard infarkti bo'lgan bemorlar guruhi 34 (18,2%) kishidan iborat bo'lib, ulardan 25 (73,53%) erkaklar va 9 (26,47%) ayollar, o'rtacha yoshi 69 yosh (43 dan 81 yoshgacha) . Birgalikdagi kasalliklar (KOAH, surunkali buyrak etishmovchiligi, oshqozon yarasi) mavjudligida guruhlar o'rtasida sezilarli farqlar yo'q edi. Klinik ma'lumotlarning qiyosiy tahlili shuni ko'rsatdiki, 2-toifa diabetning mavjudligi arterial gipertenziya va semizlik kabi yurak-qon tomir xavf omillari bilan sezilarli darajada bog'liq. Bundan tashqari, miyokard infarkti va 2-toifa diabet bilan og'rigan bemorlarning o'rtacha yoshi 2-toifa diabetga ega bo'lmagan bemorlarga qaraganda ancha yuqori (p = 0,02 shakl).

Bundan tashqari, yurak tomirlari kasalligi va 2-toifa diabet bilan og'rigan bemorlarda oldingi insult xavfi sezilarli darajada oshgan, mos ravishda 20,6% va 5,7% ni tashkil etgan. Biroq, boshqa klinik xususiyatlar yoki kasallik tarixida bu guruhlar o'rtasida sezilarli farqlar yo'q (2-jadvalga qarang).

QD2tipi mavjudligiga qarab MIST ko'tarilishiI bilan og'rigan bemorlarning klinik va anamnestik xususiyatlari

Belgilar	T2DM bilan (n=34)	T2DMsiz (n=141)	P
Erkaklar, n(%)	25 (26,5)	107 (75,9)	P=0,01
Ayollar, n(%)	9 (73,5)	34 (34,1)	P=0,01
Yoshi, yillari	69 (43; 81)	31 (33; 87)	P=0,02
Chekish, n(%)	7 (20,6)	62 (44,0)	P=0,02
Semirib ketish (BMI≥30kg/m2	18 (52,9)	37 (26,2)	P=0,003
Gipertenziya tarixi, n(%)	31 (91,2)	102 (72,3)	P=0,02
PIX, n(%)	8 (23,5)	28 (19,9)	P0.05>
Anamnezda angina pektoris, n(%)	19 (55,9)	75 (53,2)	P0.05>
ACVA, n(%)	7 (20,6)	8 (5,7)	P0.005=
CHF, n(%)	19 (55,3)	69 (48,9)	P0.05>
LVEF, %	50,0 (28,0; 50,0)	13(23,0; 68,0)	P0.05>
Killip II-IV bo'yicha OCH klassi, n(%)	5 (14,7)	26 (18,4)	P0.05>

Qon zardobidagi metalloproteinazalar (MMP) darajasini tahlil qilganda, ST segmenti ko'tarilgan miokard infarktidan (MISTko'tarilishi) keyin 1 va 12-kunlarda ushbu ko'rsatkichlarning o'rtacha qiymatlari sog'lom odamlarda o'xshash qiymatlardan oshib ketganligi aniqlandi. Xususan, MMP-1 kontsentratsiyasi birinchi kunida 1,7 marta, o'n ikkinchi kuni esa nazorat guruhiga qaraganda 2,7 baravar yuqori bo'lgan. MMP-3, shuningdek, mos ravishda 1,2 va 1,4 marta ko'tarilgan qiymatlarni ko'rsatdi. Barcha sarum MMP darajalari MIST ko'tarilishidan keyingi o'n ikkinchi kunga kelib 1,1-1,6 baravar yuqori bo'lgan. MIST ko'tarilishi bilan og'rigan bemorlar kasalxonaga yotqizish davomida MMP-1, -3 va -9 darajalarini nazorat qilish bilan

solishtirganda sezilarli darajada ko'rsatdilar va bu belgilarning darajalari o'n ikkinchi kungacha o'sishda davom etdi. Bundan tashqari, MIST ko'tarilishi va 2-toifa diabet bilan og'rigan bemorlar qabul qilingandan so'ng, boshqa bemorlarga nisbatan glyukoza, HbA1c va och qoringa glyukoza darajasi sezilarli darajada oshgan. 2-toifa diabeti bo'lmagan MIST ko'tarilishi bemorlarida 1-kun MMP-9 kontsentratsiyasi 2-toifa diabet bilan kasallanganlarga qaraganda 1,3 baravar yuqori (p = 0,0001). Gipoglikemik terapiyaga qarab MMP darajasini keyingi tahlil qilish quyidagilarni ko'rsatdi:

Faqat past karbongidratli dietaga rioya qilgan bemorlarda kasalxonaga yotqizilgan birinchi kunida MMP-3 kontsentratsiyasi gipoglikemik terapiyaning boshqa shakllarini olganlarga qaraganda 1,9 baravar yuqori bo'lgan va 12-kuni yuqori darajada saqlanib qolgan (p = 0,02). Og'iz orqali qabul qilingan gipoglikemik vositalarni qo'llagan bemorlarda MMP kontsentratsiyasi ularni qabul qilmayotganlarga nisbatan 1,3 baravar yuqori (p=0,04) edi. Shu bilan birga, MMP-3 ning eng yuqori kontsentratsiyasi klinikadan oldingi bosqichda boshqa gipoglikemik terapiya bilan birga insulin buyurilgan bemorlarda og'iz orqali qabul qilingan diabetga qarshi dori-darmonlarni qabul qilganlarga nisbatan kasalxonaga yotqizilganning birinchi va o'n ikkinchi kunida kuzatilgan.

Natijalarni muhokama qilish. Ushbu tadqiqot natijalari in vitro va in vivo tadqiqotlarning oldingi ma'lumotlariga mos keladi, ular trombozga olib kelishi va shuning uchun o'tkir koronar sindrom (O'KS) rivojlanishiga hissa qo'shishi mumkin bo'lgan aterosklerotik plaklarni beqarorlashda ma'lum metalloproteinazalarning (MMP) muhim rolini qo'llab-quvvatlaydi.).

Eksperimental va klinik ma'lumotlar, shuningdek, kasallik boshlanganidan keyin bir necha soat davomida yurak xurujidan keyin MMP ifodasining ko'payishini qo'llab-quvvatlaydi. Oldingi tadqiqotlar, shuningdek, ACS bo'lgan bemorlarda MMP-1, -2 va -9 plazma kontsentratsiyasining sezilarli darajada oshishini ko'rsatadi.

Bizning tadqiqotimiz ushbu ma'lumotlarni tasdiqlaydi, sog'lom bemorlarga nisbatan kasalxonaga yotqizish davomida MIST ko'tarilishi bo'lgan bemorlarda MMP-1, -3 va -9 darajalarida sezilarli o'sishni ko'rsatadi. Bu MIST ko'tarilishi dan keyingi birinchi haftalarda MMP-1, -2 va -9 kontsentratsiyasining ortishi ko'rsatilgan oldingi tadqiqotlarga mos keladi.

Shunday qilib, tadqiqotimiz ma'lumotlari ilgari e'lon qilingan natijalarni tasdiqlaydi va miyokard infarktining o'tkir bosqichi patogenezida MMPlarning rolini tushunishga yordam beradi. Hozirgi vaqtda ayrim metalloproteinazalarni (MMP) nafaqat aterosklerotik blyashka destabilizatsiyasining mustaqil bashorat qiluvchilari, balki miyokard infarktining erta va kechki noqulay kursini aniqlash uchun markerlar sifatida ham qo'llash imkoniyati faol muhokama qilinmoqda.

Miokard infarkti bo'lgan, ammo yurak-qon tomir kasalliklari bo'lmagan bemorlarda MMP ko'payishining mumkin bo'lgan sabablaridan biri 2-toifa diabet bilan birga bo'lishi mumkin. Shu bilan birga, bemorlarning glisemik holati va MMP kontsentratsiyasi o'rtasidagi bog'liqlikni o'rganuvchi tadqiqotlar natijalari aralashdi.

Ulardan ba'zilari miokard infarkti va 2-toifa diabetning surunkali giperglikemiyasi bo'lgan bemorlarga, shuningdek katexolaminlar, glyukagon, kortizol va o'sish gormoni ishlab chiqarishning keskin oshishi natijasida "stress" giperglikemiyasini boshdan kechirganlarga qaratilgan. Bunday hollarda kreatin kinaz faolligi va miyokard nekrozi maydonining ortishi kuzatildi.

Boshqa tadqiqotlar shuni ko'rsatadiki, 2-toifa diabetga chalingan bemorlarning yarmidan ko'pi miokard infarktining o'tkir bosqichida qondagi glyukoza miqdorini oshiradi.

Xulosa. Ushbu tadqiqot ST segmenti ko'tarilgan miokard infarkti (MIST ko'tarilishi) uchun kasalxonaga yotqizilgan 2-toifa qandli diabet bilan kasallangan bemorlarda MMP-3 va MMP-9 kontsentratsiyasi sezilarli darajada yuqori ekanligini tasdiqladi. MIST ko'tarilishi ning birinchi kunida qon glyukoza darajasi va MMP-3 va MMP-9 darajalari o'rtasida statistik jihatdan ahamiyatli korrelyatsiya aniqlandi, bu kasallik tarixidan qat'i nazar, giperglikemiyaning MMP ifodasiga mumkin bo'lgan ta'sirini ko'rsatishi mumkin. Shuningdek, HbA1c va MMP-3, -9 kontsentratsiyasi o'rtasidagi bog'liqlik bo'yicha olingan ma'lumotlar MMP darajasining diabet kompensatsiyasi darajasiga bog'liqligini ko'rsatishi mumkin. Biroq, 2-toifa diabet bilan og'rigan bemorlarda MMP kontsentratsiyasi kasallikning og'irligini aks ettiruvchi dalillar yo'q.

Matritsa degradatsiyasining kuchayishi nafaqat surunkali giperglikemiya, balki o'tkir miokard infarkti va diabetes mellitus bilan bog'liq boshqa jarayonlarning belgisi bo'lishi mumkin. Ushbu topilma 2-toifa diabet bilan og'rigan bemorlarda yuqori MMP kontsentratsiyasining potentsial prognostik qiymati bo'yicha keyingi tadqiqotlar zarurligini ta'kidlaydi.

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"ЎЗБЕКИСТОН ТЕМИР ЙЎЛЛАРИ"АЖ ТЕМИР ЙЎЛ ТАРМОҒИДА ЖОЙЛАШГАН СУВ ЎТКАЗУВЧИ ҚУВУРЛАРНИНГ ТЕХНИК ҲОЛАТИНИ БАҲОЛАШ

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Аннотация. *Мақолада "Ўзбекистон темир йўллари"нинг тезюрар ва юқори тезликдаги участкаларида тасарруф этилаётган, темир йўл ер полотноси танасида жойлашган сув ўтказувчи қувурларнинг қурилиш-технологик параметрларини тахлили келтирилган, уларнинг ишлар режими аниқланган, поездларнинг хавфсиз ҳаракатини таъминлаш учун уларнинг холати баҳоланган.*

Калит сўзлар: *сунъий иншоотлар; сув ўтказувчи қувурлар; техник ҳолат; эксплуатацион ишончлилик.*

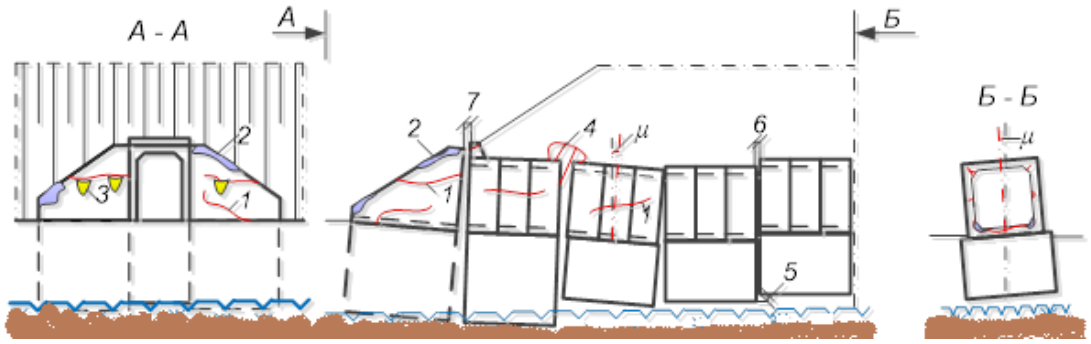
Кириш. Транспорт тизимини такомиллаштириш ва унинг фаолияти самарадорлигини ошириш мамлакат иқтисодиётини ривожлантиришнинг зарур омилидир. Темир йўл транспортида яқин келажакда ечимини топиши лозим бўлган долзарб вазифалар қаторига йўл тармоқларини кенгайтириш, темир йўл транспортида юк ва йўловчиларни ташиш жараёнини янада такомиллаштириш, локомотив ва вагон паркини замонавий ҳаракат таркиби билан янгилаш, барча тоифадаги поездларнинг ҳаракат тезлиги ва юк поездларида ўққа тушадиган юк оғирликларини ошириш, темир йўл инфратузилмасини тасарруф этиш жараёнига илғор инновацион ва ресурстежамкор технологияларни тадбиқ этиш, темир йўл транспортининг рақобатдошлигиги ошириш масалалар киритиш мумкин [1-8].

Шу билан бирга, поездларнинг ҳавфсиз ва узлуксиз ҳаракатини таъминлаш кун тартибидаги доимий ва асосий вазифадир. Темир йўлда юк ва йўловчиларнинг хавфсиз ҳаракатини таъминлашда темир инфратузилмасининг барча доимий қурилма ва иншоотларини доимо ишга яроқли холатда сақлаш мухим ахамият касб этади, жумладан турли ҳил эксплуатацион шароитда темир йўл ер полотноси устиворлиги, ҳамда мустахкамлигини таъминлаш мухим илмий-амалий масалалардан бири ҳисобланади.

Темир йўл ер полотносининг устиворлиги ва мустахкамлигини тавсифловчи мухим кўрсаткич - грунтларнинг физик-механик хусусиятлари ер полотноси танасидаги грунтларнинг намлигига боғликдир. Шу ўринда, темир йўл ер полотноси яқинида турли таъбиий жараёнлар оқибатида сувларни тўпланмаслигини таъминлаш лойиҳалаш жараёнида қабул қилинган муҳандислик ечимлари, яъни танланган ва жойлаштирилган сунъий сув ўтказувчи иншоотларнинг қурилиш-технологик параметрларига боғлиқ бўлиб, уларнинг эксплуатацион ишончлилигини ўрганиш поездлар ҳавфсиз ҳаракатини таъминлашда долзарб масалалардан бири ҳисобланади.

Сув ўтказувчи қувурларнинг қурилиш-технологик параметрларига ва ер полотносини физик-механик кўрсаткичлари, эксплуатация даврида қувурларда учрайдтган носозликларни келиб чиқиши бўйича дунёнинг йирик тадқиқотчилари томонидан илмий ва амалий тадқиқотларда ўрганилган. Шу билан бирга, темир йўлларда сув ўтказувчи

қувурларнинг турли эксплуатацион шароитларда ишлаш ҳолати, шу жумладан ҳаракат таркибидан қисқа вақт таъсир қилувчи юклама остида ишлаши, деформацияларни келиб чиқиш сабаблари ва сув ўтказувчи қувурларда пайдо бўлаётган носозликлар жумладан темир йўл ер полотносида жойлашган сув ўтказувчи қувурларнинг сув ўтказиш қобилятини темир йўл устки қурилмасига таъсири ҳам ўрганилмаган. Темир йўлларда эксплуатация қилинаётган тош, бетон ва темир-бетон сув ўтказгичларининг энг кенг тарқалган шикастланиши ва деформациялари, яъни ёриқлар, чўкишлар, ювиш ва бошқа бузилишларининг ривожланиши, деформация бўғинларининг очилиши, бўғинлар ва бошларнинг чўкиши ва гидроизоляциянинг бузилиши оқибатида қувур зонасида тупроқ эрозияси вужудга келиш ҳолатларини кўплаб кузатиш мумкин (1-расм)[9-11].



1-расм. Сув ўтказувчи қувурнинг шикастланиш ва деформацияларининг схемаси: 1 – ёриқлар; 2 – синган бўлаклар ва теримнинг қисман синиши; 3 – ишқорланиш; 4 – сексияларнинг чўзилиши ва кўтарма жисмида бўшлиқ ҳосил қилиб грунтнинг тўкилиши; 5 –сексиянинг чўкиши; 6 – деформацион чокнинг очилиши; 7 – қувур жисмидан каллакнинг узилиши; μ –сексиянинг оғиши.

Темир йўлдаги сунъий иншоотларнинг техник ҳолатини баҳолашдан асосий мақсад - уларнинг эксплуатацияга яроқлилигини аниқлаш, талаб қилинадиган таъмирлаш тури ва жорий давр учун таъмирлаш-тиклаш ишларининг ҳажмини аниқлашдир.

Ўзбекистон темир йўллари" АЖ темир йўлларида эксплуатация қилинаётган сунъий иншоотларнинг техник ҳолати ва таркибини баҳолаш амалдаги йўриқномага мувофиқ амалга оширилади [18].

Тошкент 2-темир йўл масофасининг тезюрар ва юқори тезликли йўлларидаги суъний иншоотларнинг техник холатини юқорида келтирилган йўриқнома асосида бахолаш тартибини кўриб чиқамиз.

Тошкент 2 - темир йўл масофаси тасарруфидаги Тошкент-Самарқанд участкасида жами 378 та суъний иншоот мавжуд бўлиб, улардан 61 донаси сув ўтказувчи қувурлардир.

Ушбу қувурлар 1915-2020 йилларда қурилган бўлиб, қурилиш муддатларини йиллар кесимида тақсимланиши 1-жадвалда келтирилган.

1-жадвал

Сув ўтказувчи қувурларнинг ўрнатилган вақти бўйича турлари

№	Қурилган вақти, йиллар	Сони, дона	Улуши, %
1	1915-1930	2	3

2	1931-1945	5	8
3	1946-1960	29	48
4	1961-1975	10	16
5	1976-1990	14	23
6	2005-2020	1	2
Жами		61	100%

Жадвалда келтирилган маълумотлар тахлили кўрсатадики, бугунги кунда тасарруф этилаётган қувурларнинг 50 % дан ортиғи 1915-1960 йиллардаги лойиҳалаш меёрлари асосида лойиҳаланган ва қурилган бўлиб уларнинг ўртача ёши 50 ни ташкил этади.

Ушбу қувурларни қуришда тош, ғишт, бетон, темир бетон каби турли хил қурилиш материаллардан фойдаланилган (2-жадвал). Ўтган асрнинг биринчи ярмида қурилган қувурларнинг аксарияти тош, ғишт, бетондан барпо этилган.

2-жадвал

Сув ўтказувчи қувурларнинг материали бўйича турлари

№	Материали бўйича қувурларнинг турлари	Сони, дона	Улуши, %
1	Бетон	3	5%
2	Бетон ғишт	3	5%
3	Темирбетон	46	75%
4	Темирбетон ғишт	6	10%
5	Тош ғишт	3	5%
Жами		61	100%

Сув ўтказувчи қувурларни нафақат материаллари, балки тирқишларининг шаклига хам қараб тафсифлаш мукин. Хозирги кунда тасарруф этилаётган қувурларнинг тирқиши шаклига қараб тақсимланиши 3-жадвалда келтирилган.

3-жадвал

Сув ўтказувчи қувурларнинг тирқишлари бўйича турлари

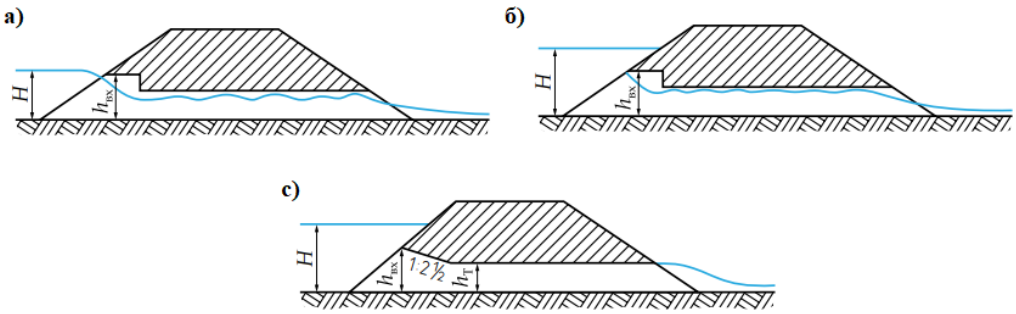
№	Қувурларнинг кўндаланг кесими бўйича турлари	Сони, дона	Улуши, %
1	Думалоқ	25	41%
2	Тўғри тўрбурчак	20	33%

3	Думалоқ ,Тўғри тўрбурчак	16	26%
Жами		**61**	**100%**

Кувурларни сув ўтказиш жараёнида қайси режимда ишлаётганини -бахолаш (аниқлаш) учун қувур тирқишини бугунги холати, яъни унинг ифлосланиш(қуйқа ёки лойқалар билан тўлиши) даражаси, кўндаланг кесими юзасини қисқариши ўрганилди. Натижада тасарруфдаги қувурларнинг босимсиз, ярим босимли ва босимли режимда ишлаётганлари белгиланди (4-жадвал). Бунда бахолаш мезони сифатида қуйидаги шартлар қабул қилинган,

- босимсиз режимда $H_{сув}<h_{қувур}$ (1)
- ярим босимли режимда $H_{сув}\leq h_{қувур}$ (2)
- босимли режимда $H_{сув}>h_{қувур}$ (3)

Бунда $H_{сув}$-қувур олдида сув баландлиги; $h_{қувур}$-қувир ичида сув баландлиги (2-расм).



2-расм. Сув ўтказувчи қувурларнинг ишлаш режими[19]:

а) қувурни босимсиз режим ишлаши. б) қувурни ярим босимли режим ишлаши.

с) қувурни босимли режим ишлаши.

4-жадвал

Сув ўтказувчи қувурларнинг ишлаш режими бўйича тақсимланиши

№	Қувурларнинг ишлаш режими бўйича тақсимланиши	Сони, дона	Улуши, %
1	Босимсиз	36	59
2	Ярим босимли	2	3
3	Босимли	23	38
Жами		**61**	**100%**

Сув ўтказувчи қувурлар босимсиз холатда ишлайди деб тахмин қилинади ва лойиҳаланади. Қувурдан оқиб ўтаётган сув оқимининг лойқаланиш даражаси турлича бўлиб, қувур тубида оғир фракцияли чўкиндиларни тўпланиб қолиш холати кузатилади. Бу холат ўз навбатида қувурнинг сув ўтказиш қобилиятига негатив таъсир кўрсатади. Эксплуатация қилинаётган қувурларнинг лойқалар билан тўлиб қолганлик даражаси 5-жадвалда кўрсатилган.

5-жадвал

Сув ўтказувчи қувурларнинг лойқага тўлганлик даражаси бўйича турлари

№	Қувурларнинг лойқага тўлганлик даражаси бўйича турлари, %	Сони, дона	Улуши, %
1	15	10	16
2	20	10	16
3	30	18	30
4	40	9	15
5	60	8	13
6	80	6	10
Жами		**61**	**100%**

Мисол тариқасида 3-расмда КМ 3419 ПК3 жойлашган қувурнинг техник холати келтирилган. Расмда ўлчами 1 м бўлган думалоқ темир қувур (3.а-расм) тирқишининг лойқа ва чўкиндилар билан 80 % га тўлиб қолган холати акс эттирилган. Тозалаш ишлари ўтказилиб қувур лойқа ва чўкиндилардан буткул тозаланган ва босимсиз режимда ишлаш холатига келтирилган (3.б-расм).

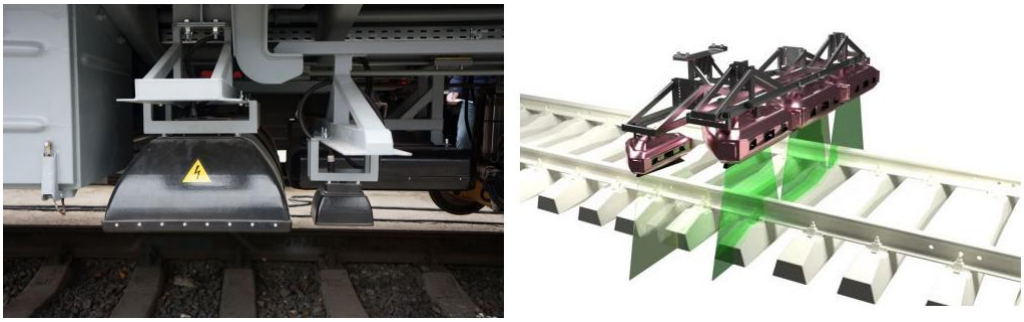
а) б)

3-расм. Сув утказувчи қувурнинг техник холати:

а) сув ўтказувчи қувурнинг босимсиз холатдан босимли холатда ишлаши.

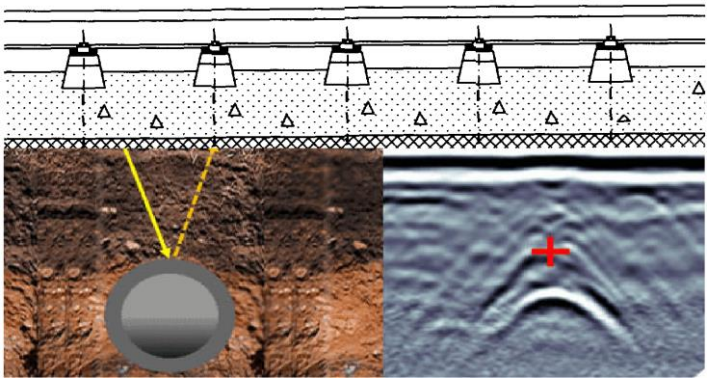
б) сув ўтказувчи қувурнинг тозаланган холати.

Сув ўтказувчи қувурларни темир йўл сунъий иншоотларга ҳизмат кўрсатиш йўл таъмирловчилари ва МДМ (Мониторинг ва диагностика маркази) томонидан визуал ва 116-йўл текширув вагони орқали темир йўл ер полотноси ва сув ўтказувчи қувирларнинг холати ўрганилади(4-расм).



4-расм. МДМ 116- йўл текширув вагони.

Ер полотноси ва қувурлар ҳолати кўриб чиқилганида ер полотносида ва қувур атрофидаги грунтларда чўкишлар аниқланди ва 5-расмда кўрсатилган.



4-расм. МДМ 116- йўл текширув вагонидан олинган маълумот таҳлили.

Сув ўтказувчи қувурни лойқалар билан тўлиб қолиши, қувурни босимли режимда ишлаши натижасида қувурга туташган ер полотноси танасидаги грунтларнинг физик-механик хусусиятлари (грунтларнинг пластиклиги, кўпчиши, грунтларнинг ёпишқоқлиги, ивиши, ювилиши, эрувчанлиги) вақт мабойнида ўзгариб боради, грунтнинг кўтарувчанлик қобилияти пасайиши натижасида эса ер полотносининг бузилиши (5-расм) ва устиворлигини йўқотиши, поездлар ҳаракатига хавф туғилиши холатини кузатиш мумкин.

5-расм. Темир йўл тармоғида сув ўтказувчи қувурниг носоз холатга келиши

Ҳулоса. “Ўзбекистон темир йўллари”нинг тезюрар ва юқори тезликдаги участкалари темир йўл ер полотноси танасида жойлашган сув ўтказувчи қувурларнинг қурилиш-технологик параметрларини тахлили, уларнинг ишлар режими ўрганиш, поездларнинг хавфсиз ҳаракатини таъминлаш учун уларнинг холати белгилаш натижасида қуйдагича ҳулоса қилишимиз мумкин:

- барча тоифадаги поездларнинг хавфсиз ва узлуксиз ҳаракатини таъминлашда сув ўтказувчи қувурларнинг техник холати мухим ахамият касб этади;
- қувурларни техник холати ўзгариши, босимсиз режимдан босимли ёки ярим босимли ишлаш режимига ўтиши ер полотносининг физик-механик хусусиятларини ўзгариши ва ер полотносининг кўтариш қобилиятини йўқотишга олиб келиши мумкин;
- қувурларни босимсиз режимдан босимли ёки ярим босимли режимда ишлашга ўтишини бартараф этиш учун уларни мунтазам кузатиш ва зарур холларда тозалаш ишларини ўтказиш лозим.

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THE IMPORTANCE OF METABOLIC DISORDERS IN THE TREATMENT OF STABLE ANGINA

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Annotation:*Coronary artery disease is a disease of the heart and blood vessels (cardiovascular disease), which also includes stroke, high blood pressure and atherosclerosis.*

The main symptoms of coronary heart disease are angina (stable and unstable), myocardial infarction (MI) and sudden coronary death. However, the largest group is made up of angina patients, including those who have already had a heart attack and those who suffer from coronary artery disease.

Therefore, it is no coincidence that real doctors are interested in the correct treatment of patients with angina pectoris and the selection of optimal therapy.

Key Words: *Coronary Artery disease, myocardial infarction, angina pectoris.*

Purpose of the study: When treating these patients, physicians face two challenges, some of which require different approaches.

Prevention of myocardial infarction and sudden cardiac death and elimination or maximum enhancement of symptoms of the disease (clinical and/or instrumental signs of myocardial ischemia).

In addition, successful treatment of patients with angina requires modification of risk factors that contribute to the development of atherosclerosis, the pathological substrate of coronary heart disease.

Materials and methods: Current thoughts on the pathogenesis of angina pectoris In all forms of coronary heart disease, myocardial ischemia results from an imbalance between oxygen supply and myocardial demand.

In stable angina, myocardial ischemia due to restriction of coronary blood flow leads to severe coronary artery stenosis.

It has long been known that vasodilator and vasoconstrictor stimulation can significantly change the tone of the coronary arteries and “introduce” additional dynamic stenosis into already existing solid stenoses. However, only relatively recently has it become known that the endothelium plays an important role in this process as a regulator of vascular tone, and its dysfunction can occur even before the appearance of atheroma.

It is even known that this is an early stage, during the progression of the atherosclerotic process. The endothelium plays an important role in vascular homeostasis.

It involves the local production of nitric oxide (II) (NO) from L-arginine by endothelial NO synthase.

Along with NO, a potent vasodilator, the endothelium secretes prostacyclin, another vasodilator and tissue plasminogen activator.

In unaffected coronary arteries, an increase in myocardial oxygen demand is accompanied by immediate dilation of arterioles (approximately 0.1 mm in diameter), which is induced by the “release” of vasoactive factors (NO, prostanoids, adenosine).

This leads to dilation of larger arterioles, which ultimately increases coronary blood flow and myocardial oxygen demand.

All classic coronary risk factors (arterial hypertension, hypercholesterolemia, smoking) are associated with functional and morphological changes in the endothelium, causing “desquamation” of this area and, importantly, a decrease in NO production.

Impaired endothelium-dependent dilation of the coronary arteries has been found to correlate with risk factors for coronary heart disease.

Research results: Another important property due to which endothelial dysfunction leads to the progression of coronary atherosclerosis is its anticoagulant properties.

The inner endothelium prevents the activation, adhesion and migration of leukocytes and regulates the proliferation of smooth muscle cells in the walls of blood vessels.

Damage to the endothelium leads to activation of proliferative processes and increased permeability to LDL cholesterol (low-density lipoproteins)[4].

At present, there is no doubt about the connection of all these phenomena with the growth of atherosclerotic plaque and its subsequent rupture.

Due to the above circumstances, the endothelium is considered an important target for therapeutic intervention.

Since all currently known risk factors worsen endothelial function, removal or modification of these factors should help restore endothelial function and prevent the development of atherosclerosis and/or the development of thrombotic complications.

Therefore, measures to eliminate coronary risk factors are therapeutic, or rather the first important task of treating stable angina, that is, the task of preventing the development of complications of the disease (MI, sudden death).

Much attention is currently paid to metabolic changes that occur when there is insufficient blood supply to the myocardium[5, 6].

Immediately after ischemia occurs, the energy balance of myocardial cells is disrupted.

These changes are characterized by a progressive decrease in the content of high-energy phosphates, accumulation of lactate and protons, the development of intracellular acidosis and disruption of ionic homeostasis.

Myocardial energy metabolism is closely related to the functional state of the heart and is therefore an important target for therapeutic intervention.

Removal or modification of risk factors Modification of risk factors is one of the most important measures in the treatment of patients with coronary heart disease.

Even if your doctor determines that myocardial revascularization (eg, coronary artery bypass grafting or coronary balloon angioplasty with stent placement) is necessary, control of risk factors for atherosclerosis must continue before and after surgery[7].

Otherwise, the effectiveness of surgical or non-surgical intervention will quickly be lost.

This is due to the fact that the operation itself does not eliminate the causes and factors in the development of the atherosclerotic process.

Clinicians should pay particular attention to interventions that have demonstrated benefit and effectiveness in large randomized trials (or are supported by epidemiological observations): medication, smoking cessation, diabetes treatment, diabetes reduction, weight loss, exercise training, lipid-lowering therapy for LDL cholesterol 130 mg /dl.

For many risk factors, the effectiveness of interventions has not been convincingly demonstrated or has not yet been studied. Hormone replacement therapy in postmenopause. Folic acid therapy for hyperhomocysteinemia. Treatment with ascorbic acid and tocopherol.

Effective treatments for some disorders of the coagulation and anticoagulant systems have not yet been discovered.

Recently, a complex of metabolic disorders in cardiovascular diseases, in particular hyperinsulinemia and insulin resistance, has received much attention as a potential risk factor for the development of coronary heart disease[8].

Hyperinsulinemia often accompanies other diseases (obesity, hyperglycemia, arterial hypertension, dyslipidemia), which represent a unique symptom complex - metabolic syndrome.

It has recently been shown that elevated basal blood insulin levels significantly increase the risk of coronary heart disease in men.

The location and significance of these metabolic disorders, as well as the implementation of effective preventive measures, require further study. Much attention has been paid to inflammatory factors, especially C-reactive protein (CRP). A number of large studies have found that an elevated level of CRP in patients with acute coronary syndrome (MI, unstable angina) is a prognostic factor for the development of an unfavorable course of the disease. Although the role of inflammatory factors in patients with stable angina is less clear, there is reason to believe that in this category of patients these markers are involved in the progression of the atherosclerotic process. Statins, a type of lipid-lowering drug, appear to have the greatest effect on inflammatory factors[9, 10].

There is evidence that the anti-inflammatory properties of statins and their positive effect on the functional state of the vascular endothelium are no less important than their lipid-lowering effects.

These and other drugs for the development of atherosclerosis, since there is currently no reliable method for predicting exacerbation of angina or the development of unstable angina and effectively overcoming undesirable consequences, are also important to study and test.

Even a simple analysis of classic and emerging risk factors for the development of coronary heart disease allows doctors to carry out appropriate diagnostic procedures and identify risk factors already at the first stage of treatment of patients with stable angina.

is the need to identify and outline preventive measures.

Getting rid of them requires a lot of effort not only from the doctor, but also from the patient.

Acetylsalicylic acid has an antithrombotic effect by inhibiting the synthesis of cyclooxygenase and thromboxane A2 in platelets.

The use of acetylsalicylic acid in more than 3,000 patients with stable angina was associated with a 33 percent reduction in the risk of cardiovascular events[11-14].

In patients with unstable angina, treatment with acetylsalicylic acid improves short- and long-term prognosis by reducing the incidence of fatal and non-fatal myocardial infarction.

There is also a large evidence base for the beneficial effects of acetylsalicylic acid in patients after a heart attack.

This drug is recommended in doses of 75-125 mg per day, unless there are contraindications.

If dietary intervention does not normalize lipids, reduce total cholesterol to <5.0 mmol/L (192 mg/dL) and LDL cholesterol to <2.6 mmol/dL in all patients with stable angina.

The choice of drug and its dosage depend on the lipid profile. Finally, all patients following a heart attack should always receive B-blockers unless contraindicated. In this group of patients with coronary artery disease, B-blockers reduce mortality. It is necessary to clarify the advisability of prescribing antioxidants and hormone replacement therapy for postmenopausal women. Initial data from the HOPE trial demonstrate the preventive efficacy and preservation of left ventricular systolic function of angiotensin-converting enzyme (ACE) inhibitors in patients with various cardiovascular diseases.

However, results from other studies (EUROPA, PEACE) are needed before recommendations can include this class of drugs in this group of patients.

Of undoubted interest is the analysis of the status of prescription of major cardiovascular drugs and the frequency of detection of classical risk factors for atherosclerosis in 1995-1996 and 1999-2000[16].

Based on materials from special studies Euro Aspire I and II (data from a number of European countries) in patients with proven coronary artery disease (Fig. 1 and 2).

Although there have been positive trends, including increased prescription of medications with proven benefits and improved blood pressure and cholesterol control, trends in obesity and smoking are alarming.

Conclusion:

Statistics show that the annual mortality rate for patients with stable angina is 2-3%, with another 2-3% developing a non-fatal myocardial infarction, which is generally a relatively low rate compared to other forms of angina.

harmless disease.

However, the results show that many of these patients have a low quality of life and significant limitations in daily activities, mainly due to the occurrence of angina attacks. All this indicates the need to further improve the selection of antianginal therapy, its combination with myocardial revascularization, and the use of other drugs that prevent the development of atherosclerosis of the coronary arteries.

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FEATURES OF THE DEVELOPMENT OF CHRONIC HEART FAILURE IN PATIENTS AFTER MYOCARDIAL INFARCTION

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Annotation. *Modern methods of treating myocardial infarction (MI) have significantly reduced mortality both in the hospital and during the first year after discharge. However, in the next five years the mortality rate remains high. Effective treatment in the acute phase has led to an increase in the number of surviving patients, many of whom experience significant impairment of left ventricular function. This has led to an increase in the number of patients with signs of congestive heart failure (HF), which begins with myocardial infarction.*

Chronic heart failure (CHF) is a clinical syndrome that develops as a result of the inability of the heart to provide adequate blood circulation to meet the metabolic needs of the body. CHF is characterized by symptoms such as shortness of breath, fatigue, decreased physical activity and swelling.

Key words: *Chronic heart failure, myocardial infarction, renin-angiotensin-aldosterone*

Mechanisms of development of heart failure. Morphological changes in the left ventricle play a significant role. In the area of infarction, disproportionate stretching and thinning of the ventricular wall occurs, a process known as “infarct expansion” that begins in the first two weeks after myocardial infarction. Histopathological mechanisms include cell elongation, myocyte rupture, decreased intercellular space, and cell displacement.

In the later stages of myocardial infarction (between weeks 2 and 6), collagen deposition leads to the formation of a durable scar and “healing” of the infarction. In the intact myocardium, myogenic dilatation of the left ventricle develops. Myocardial elongation occurs due to the displacement of muscle fibers, and not their overstretching. Some researchers believe that the initial dilatation of unaffected areas of the myocardium is compensatory in nature, aimed at restoring stroke volume and maintaining systemic hemodynamics. However, others, such as N. Gadsbool, doubt the compensatory nature of dilation and suggest the presence of other, as yet unidentified, mechanisms.

Histological studies show that in the preserved areas of the left ventricle, as well as in the right ventricle and atrium, there are mosaic structural lesions, which are a reaction to hypoxia and overload. This leads to disruption of the connection between capillaries and myocytes, a decrease in the diffusion area and partial death of myocytes. R. McKay and co-authors believe that early dilatation causes hypertrophy of the unaffected part of the wall, since the surviving myocardium has to do the work of the dead parts. Compensatory myocardial hyperfunction leads to an increase in protein synthesis and myocardial hypertrophy, while hyperplasia practically does not occur.

The effectiveness of compensatory processes largely depends on the state of the coronary blood supply to the surviving myocardium. With inadequate blood supply, dilatation of the cavities is greater and is accompanied by high mortality, since compensatory processes require energy and plastic material. If blood flow is limited by stenosis of the artery, compensatory processes do not reach the required level and cannot be maintained for a long time.

Improvements in the treatment of myocardial infarction (MI) have significantly reduced both in-hospital mortality and mortality within a year after discharge. However, in the next five years the mortality rate remains high. More effective treatment in the acute phase has increased the number of surviving patients, many of whom have significant left ventricular dysfunction,

leading to an increase in the number of patients with congestive heart failure (HF). Myocardial infarction is the starting point in the development of heart failure.

Neuroendocrine changes in heart failure. Neuroendocrine activation plays an important role in post-infarction restructuring. In the first days after myocardial infarction (MI), significant neurohormonal changes occur, primarily activation of the sympathetic and renin-angiotensin-aldosterone (RAA) systems. Local activation of the renin-angiotensin system in myocardial tissue reaches its peak 72 hours after the onset of MI and depends on the degree of left ventricular dysfunction. If diuretics are not used in the treatment of heart failure (HF), the activity of the RAA system normalizes within 5-7 days. However, plasma levels of norepinephrine and atrial natriuretic factor (ANF) remain elevated, which correlates with the degree of left ventricular dysfunction. The SAVE (Survival and Ventricular Enlargement) study found that neurohormonal activation may persist for up to 12 days after MI.

Activation of the sympathetic and RAA systems promotes early hypertrophy of cardiomyocytes and replacement of the infarction zone with scar tissue. Neuroendocrine activation and ventricular remodeling normalize cardiac output in the first weeks after myocardial infarction, but one-fifth of patients with large focal infarcts develop progressive volume enlargement and clinical signs of HF. Congestive HF was previously thought to be associated with hemodynamic compromise, but studies have shown that disease progression may occur despite hemodynamic improvement. Vasodilators and myocardial contractility stimulants often do not stop disease progression and may reduce survival, indicating the importance of neurohormonal factors in the development of heart failure.

In chronic heart failure, an important role in compensating the peripheral circulation is played by an increase in circulating blood volume. If the heart cannot provide sufficient blood flow, extracardiac compensatory mechanisms are activated, which increase blood flow in the tissues by increasing the volume of blood in the circulatory system. Neuroendocrine activation maintains homeostatic control by stimulating vasoconstrictor systems. In patients with congestive HF, the levels of major neurohormones (norepinephrine, renin, angiotensin II, arginine vasopressin (AVP)) and other biologically active substances (dopamine, prostaglandins, PNF, endothelin) are increased, which causes vasoconstriction.

A decrease in cardiac output activates the sympathetic nervous system, which leads to the release of catecholamines, which increase heart rate, blood pressure and myocardial contractility, and also activate the RAA system. Chronic sympathetic activation in heart failure reduces the density of b-adrenergic receptors on cardiomyocytes, which weakens the inotropic effect of circulating catecholamines. High levels of catecholamines can cause myocardial necrosis and arrhythmias, which is especially important since about 50% of deaths in patients with heart failure are associated with tachyarrhythmias. Catecholamine levels correlate with disease severity and patient survival.

Activation of the RAA system promotes vasoconstriction and fluid retention. Renin converts angiotensinogen to angiotensin I, which is then converted to angiotensin II, a powerful vasoconstrictor that stimulates the release of aldosterone and AVP, leading to sodium and water retention. The tissue renin-angiotensin system plays an important role in the development of congestive heart failure. Angiotensin II, synthesized in cardiac tissue, may promote myocardial contractility and cardiomyocyte growth. High levels of angiotensin II and catecholamines can cause ventricular arrhythmias.

The AVP system, an important mediator of peripheral vasoconstriction, maintains body water levels by exerting an antidiuretic effect on the renal tubules. In patients with congestive HF, plasma AVP concentrations are usually elevated. PNF, produced by atrial myocytes, promotes natriuresis, diuresis and vasodilation, inhibiting the secretion of renin and aldosterone. However, in HF, the response to increased PNP release is weakened.

Endothelin, a strong vasoconstrictor, stimulates the release of PNP, AVP and aldosterone. Its plasma levels are elevated in patients with congestive heart failure but do not correlate with systemic vascular resistance or cardiac output. Studies have shown that sympathetic activation often precedes the transformation of left ventricular dysfunction into HF. In post-MI patients with ejection fraction less than 40%, but without evidence of HF, elevated levels of norepinephrine, renin, AVP and PNF were observed.

Methods of drug correction of heart failure include ACE inhibitors and beta-blockers, which interfere with neurohormonal responses. Enalapril reduces mortality in patients with HF, and β-blockers (metoprolol, bucindolol, nebivolol, bisoprolol and carvedilol) have a therapeutic effect, reducing mortality and reducing the number of hospitalizations. Diuretics, although important for controlling fluid overload, may have an adverse effect on HF by stimulating activation of the RAA system. ACE inhibitors and b-blockers reduce neurohormonal activation by improving baroreceptor function and preventing the neurohormonal cascade.

Experimental studies of renin inhibitors and angiotensin II receptor antagonists have shown their positive effects on hemodynamics and renal function. SGA antagonists cause peripheral vasodilation and improve cardiac function. Neutral endopeptidase inhibitors, which increase plasma levels of PNP, show encouraging results in the treatment of hypertension and congestive HF.

The pathogenesis of congestive heart failure (HF) in patients after myocardial infarction (MI) includes several key stages:

1. Hemodynamic changes:

- Initial disturbances are associated with a decrease in blood pressure, tissue perfusion and oxygenation.
- Activation of vasoconstrictor systems (sympathetic nervous system, renin-angiotensin-aldosterone (RAA) system and arginine-vasopressin (AVP) system) through baroreceptors.
- Increased tone of arterial and venous vessels, sodium and water retention.
- Compensatory increase in blood pressure, heart rate and myocardial contractility, preload increases.
- Weakening of left ventricular function leads to an increase in end-diastolic pressure and volume.

2. Neurohumoral changes:

- Decreased renal perfusion due to low cardiac output leads to the release of renin, which stimulates the synthesis of angiotensin II.
- Angiotensin II increases vasoconstriction and stimulates the release of aldosterone.
- Aldosterone causes sodium and water retention, which increases the volume of circulating blood, leading to fluid accumulation and the formation of edema.
- Stagnation of blood in the pulmonary and systemic circulation due to increased blood flow to the decompensated heart.
- Additional neurohormonal activation and decreased cardiac output, completing a vicious circle of disorders.

Prevention and treatment:

- Prevention of congestive heart failure should begin in the first hours of acute myocardial infarction.
- Drugs that limit the necrosis zone (thrombolytics, nitrates, b-blockers) should be used in the early stages.
- In the following days, it is necessary to use drugs that reduce the load on the myocardium and eliminate excessive activation of the neurohormonal system.

Conclusions: Thus, the pathogenesis of congestive HF after MI includes complex interrelated hemodynamic and neurohormonal processes that reinforce each other and contribute to the progression of the disease. Treatment is aimed at interrupting these pathological chains and improving heart function.

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POSSIBILITIES FOR THE DEVELOPMENT OF LEFT VENTRICULAR DIASTOLIC DYSFUNCTION IN PATIENTS WITH TYPE 1 DIABETES MELLITUS

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Annotation: *Left ventricular diastolic dysfunction (LVDD) is one of the early manifestations of diabetic cardiomyopathy, which is common in patients with type 1 diabetes mellitus (T1DM). Predicting the development of LVDD in such patients is important for early diagnosis and timely intervention, which can slow disease progression and improve outcomes.*

Key Words: *Left ventricular diastolic dysfunction, diabetes mellitus, insulin*

Purpose of the studyis to identify risk factors for impaired left ventricular diastolic function in patients with type 1 diabetes mellitus (T1DM) and assess their diagnostic and prognostic significance to create a model for predicting the development of diabetic cardiomyopathy.

Material and methods: The study is based on the results of a comprehensive examination of patients with T1DM, the disease duration of more than 5 years, who received treatment in the endocrinology department of the City Endocrinology Hospital of Samarkand and were on an outpatient basis in the period from 2020 to 2023.

The study sample consisted of 140 patients with T1DM (72 men and 68 women). All patients received basal-bolus insulin therapy, including long-acting and ultra-short-acting human insulin analogues; In 5 patients, insulin pump therapy was used.

Exclusion criteria from the study included the presence of T2DM, other specific forms of diabetes, the presence of diabetic macrovascular complications, diabetic retinopathy in the preproliferative and proliferative stages, as well as a decrease in glomerular filtration rate ≤45 ml/min, a history of cardiac arrhythmias, arterial hypertension, polyneuropathy of non-diabetic origin , alcoholism, chronic alcohol intoxication, pregnancy, lactation and concomitant endocrine diseases (pathology of the thyroid gland, adrenal glands, etc.). All patients included in the study were diagnosed with diabetic cardiomyopathy according to the "Algorithms for providing specialized medical care to patients with diabetes mellitus." The diagnostic criteria for diabetic cardiomyopathy is the presence of two or more abnormal findings. All patients with type 1 diabetes were assessed for left ventricular diastolic function using echocardiography, in accordance with OS recommendations [14]. To characterize left ventricular diastolic dysfunction, the following signs were used: ratio E/e' average >14, velocity of the medial part of the mitral valve annulus e' <7 cm/sec, left atrial volume index >34 ml/m². If 3 of these signs were detected, left ventricular diastolic dysfunction was established.

In molecular medicine, quantitative determination of metalloproteinases was carried out: MMP-1, MMP-2, MMP-3 in the blood serum of patients with type 1 diabetes using ready-made AbFrontiers human ELISA, Quantikine Immunoassay, AESKULISA kits. For molecular genetic research, the point of mutation of endothelial nitrogen synthase-3 at position 786 (T>C) was selected with DNA isolation from the whole blood of patients using phenolchloroform extraction. To amplify the obtained genetic fragments, NPF "Litex" primer test kits were used in a thermal cycler.

To predict the development of left ventricular diastolic dysfunction in patients with type 1 diabetes and build a prognostic model, the logistic binary regression method was used, which is used to analyze the relationships between variables [15, 16]. Based on clinical, laboratory and instrumental

studies, a binary dependent variable was calculated: 0 - absence of left ventricular diastolic dysfunction, 1 - presence of myocardial damage in the form of left ventricular diastolic dysfunction. The use of logistic regression is due to the characteristics of the data, including the deviation of predictor parameters from the normal distribution, the presence of both continuous and discrete variables, as well as the possibility of reducing the dependence to a binary function [17].

All categorical variables were transformed into dummy variables written in binary form (1/0), excluding one category from each variable to reduce multicollinearity [18]. For example, the variable "diabetic cardiomyopathy" was presented as a binary variable, where 0 is the absence of myocardial damage, 1 is the presence of diabetic cardiomyopathy.

The model included factors that previously showed statistically significant differences in the diagnosis of left ventricular diastolic dysfunction: length of diabetes (in years), the presence of diabetic chronic kidney disease, levels of MMP-1, MMP-2, MMP-3, studies of the NOS3 gene [20, 21]. Statistical processing of the results was carried out using the Statistica 12.0 software package. Results are presented as median and interquartile range (Me [Q1; Q3]).

Research results. Patient characteristics are presented in Table 1. In the study group of patients with T1DM, diabetic left ventricular diastolic dysfunction (LVDD) was detected in 58 people. According to the results of the study, LV relaxation function was detected in 39 study participants. When creating a logarithmic regression model, the necessary conditions were checked and met both at the stage of preparation for analysis and during the process of creating the model. The model included independent variables that were previously associated with the development of LVDD in patients with T1DM [18, 19]. The independent variables were divided into two types: quantitative and category. When developing the final binary logistic regression equation, a final loss of 5.578737 was found, $\chi 2 = 75.13$ with 4 degrees of freedom and a significance level of $p = 0.000301$, which indicates high reliability mathematical model.

To further verify the accuracy of the model and its characteristics, an increase in the size of the validation sample is required, including patients with T1DM from other medical centers.

Discussion. This study is an example of a successful solution to a prediction problem in a real-world clinical setting using logarithmic regression. The main objectives of the researchers included the search for predictors that influence the development of the outcome under study, as well as the creation of a prognostic model for predicting the development of the disease.

Sample size plays an important role in multivariate analysis, including logistic regression. An insufficient number of events can reduce the power of statistical tests and increase prediction errors. If there is an insufficient number of events, it is necessary to limit the number of predictors. In this study, from 170 to 350 patients with T1DM are required to build a mathematical model, depending on the initial value of the independent variables (k=5). Quantitative variables include levels of MPP-1, MPP-2 and MPP-3.

The study identified the main prognosis factors in patients with type 1 diabetes. These factors include the presence of diabetic cardiomyopathy (DCAM), changes in metalloproteinase-1 (MPP-1) levels, the presence of the T allele of the NOS3 gene, and the duration of the disease, presented as a binary variable. These parameters require attention from endocrinologists, cardiologists and other specialists. The accuracy of the described model is 66.3%, with a positive predictive value of 79%.

The sensitivity of the model characterizes the proportion of correctly identified positive cases that affect the predicted event and can vary from 0 to 100%. The specificity of the model reflects the proportion of correctly identified negative cases and can also vary from 0 to 100%.

Experts put forward requirements for model sensitivity of at least 95% and specificity of at least 80%, which must be confirmed during validation in clinical studies. The created mathematical model, based on logistic regression, did not allow achieving the specified indicators for objective reasons. Nevertheless, the overall accuracy of the model indicates the promise of further research in this area.

In conclusion, under hyperglycemic conditions, increased NOS3 gene expression with decreased antioxidant systems in diabetic patients contributes to decreased nitric oxide bioavailability, which plays a key role in the development of vascular lesions. Endothelial dysfunction and changes in metalloproteinase activity are associated with myocardial remodeling and the development of diabetic left ventricular diastolic dysfunction. The mathematical model developed as part of the study represents a modern method for assessing the risk of developing diabetic cardiomyopathy in patients with type 1 diabetes, taking into account the level of MPP-1, the presence of diabetic autonomic neuropathy and the TT genetic variant of the NOS3 gene.

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CLINICAL EFFECTIVENESS OF ORAL ANTICOAGULANTS IN PATIENTS WITH ATRIAL FIBRILLATION

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Annotation. *Atrial fibrillation (AF) is one of the most common heart rhythm disorders. The prevalence of atrial fibrillation increases significantly with age: from 1.5% at ages 50 to 59 years to 23.5% at ages 80 to 89 years. Atrial fibrillation is associated with a high risk of thromboembolic complications, which are a leading cause of disability and mortality in patients [12].*

The annual incidence of cardioembolic stroke in patients with atrial fibrillation not taking anticoagulants is 3.3–4.5% [3, 4].

The risk of death from stroke due to atrial fibrillation is twice as high as other strokes, and the cost of treating such strokes is 1.5 times higher [5]. Up to 50% of patients with acute stroke may die within 1 year of stroke [6].

Prevention of thromboembolic complications is especially important in this population, as the likelihood of stroke increases more than 10-fold in people who have previously had a stroke or transient ischemic attack [7].

In most cases, patients who underwent thrombectomy for embolism had a history of high risk of thromboembolic complications.

However, outpatient antithrombotic therapy is usually provided in less than 30% of cases [9]. In most cases, thromboembolic complications can be prevented by appropriate antithrombotic therapy, which is one of the main components of AF treatment [10].

Appropriate hypocoagulation clearly reduces all-cause mortality in patients with arrhythmia [4]. In modern medicine, direct oral anticoagulants (DOACs) are often used to prevent cardiogenic thromboembolic complications. The number of patients receiving treatment increases every year. This is due, first of all, to the many advantages of DOACs over indirect anticoagulants: predictability of action, no need for laboratory monitoring, no dietary exposure, no interaction with other drugs [11].

However, the availability of a wide range of DOACs and the possibility of individualized treatment pose the task of choosing the most appropriate drug for doctors [12].

Experience gained in real clinical settings will provide tools for further evaluation of the effectiveness and safety of oral anticoagulants and will help clinicians in prescribing individual antithrombotic therapy.

Keywords: *Oral anticoagulants, atrial fibrillation, antithrombotic therapy.*

Purpose of the study: To analyze the effectiveness and safety of DOACs in patients with atrial fibrillation in real clinical conditions.

Materials and methods:A non-interventional prospective and partially retrospective study was conducted in 356 patients with non-valvular atrial fibrillation who were prescribed DOACs. The average age of the patients was 66.4±6.4 years.

Participation criteria: Age 50-75 years. Creatinine clearance is 50 ml/min or more. At the time of the study, no additional antiplatelet therapy was administered. Exclusion criteria: Communication limitations due to cognitive impairment.

Depending on the type of DOAC taken, all patients were divided into three equal groups: group 1 (n=120) took rivaroxaban at a dose of 20 mg 1 time per day (n=112) - dabigatran etexilate 150 mg

2 times; Group 3 (n=124) daily – apixaban 5 mg 2 times a day; The patient groups were comparable in age, comorbidities, and risk of thromboembolic and hemorrhagic complications (Table 1).

Comparative characteristics of patient groups

Parameter	Rivaroxaban	Dabigatran etexilate	Apixaban
Age	66.8±7.6	64.9±5.3	67.5±6.3
CHA2DSVASc. points	3.4±0.76	3.4±1.1	3.7±0.57
Risk of bleeding	1.2±0.41	1.2±0.63	1.4±0.59
Comorbidities Arterial hypertension	73 (60.8%) 19 (15.8%)	67 (59.8%) 16 (14.3%)	76 (61.3%) 21 (16.9%)

The observation period was 2 years from the date of drug prescription.

Patients were interviewed quarterly by telephone to identify thromboembolic and/or hemorrhagic complications, total mortality was taken into account, and adherence to treatment was assessed.

Analysis of the obtained data was carried out using Microsoft Office Excel 2011 and a publicly available online statistical calculator.

Clinical characteristics are presented using descriptive statistics methods (means, percentages).

To assess the significance of differences, the Mann-Whitney U test was used.

Differences were considered statistically significant at time p.

There was no statistically significant difference in the number of cardiogenic thromboembolic complications between the groups.

In the group of patients taking apixaban, a decrease in the incidence of bleeding was observed, but it did not reach statistical significance.

This study confirmed the results of numerous randomized trials showing that DOACs can effectively and relatively safely prevent cardiogenic thromboembolic events in patients with atrial fibrillation.

Preparations containing activated blood clotting factors.

When using one or another drug in patients aged 50 to 75 years with a creatinine clearance of at least 50 ml/min, no significant differences were observed.

Conclusion. Thromboembolic complications are caused by direct costs to the healthcare system (eg, emergency hospitalization, long-term treatment, high treatment costs) and indirect economic losses due to long-term drug therapy, disability and preterm birth, causing significant socio-economic consequences and damaging mortality rates [13].

Prevention of cardiogenic thromboembolic complications is more important for prolonging life than antiarrhythmic therapy for maintaining sinus rhythm.

Effective antithrombotic therapy significantly reduces the risk of adverse outcomes in patients with atrial fibrillation.

The study confirmed the data of numerous randomized studies on the ability of DOACs to effectively prevent thromboembolic complications in patients with atrial fibrillation.

We previously conducted a study of a similar design called “Prospective evaluation of the effectiveness and safety of oral anticoagulants in patients with atrial fibrillation,” the results of which were published in 2019.

[14] However, the objectives of the studies were different, and the number of patients in the comparison groups was small.

An important feature of this study is that the results were obtained in a real clinical setting on a representative group of participants.

The safety profile of all three drugs also appeared to be favorable, allowing each of them to be used in patients at risk of bleeding. It is known that the risk of thromboembolic and hemorrhagic complications further increases with age.

Modern doctors have the opportunity to select DOACs to personalize treatment and increase efficiency in accordance with the instructions for the drug and data from randomized trials and post-marketing studies. In this study, DOACs demonstrated consistent comparable efficacy and safety in patients aged 50 years and older.

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A SYMPHONY OF HOPE: LANGUAGE REVITALIZATION EFFORTS – CHALLENGES AND SUCCESSES

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Annotation: *This article explores the complexities of language revitalization, examining the challenges faced and the successes achieved in reviving endangered languages. It highlights the importance of linguistic diversity, the impact of globalization on languages, and the diverse strategies employed by communities and organizations to revitalize their linguistic heritage.*

Annotatsiya*: Ushbu maqola tilni jonlantirishning murakkabliklarini o'rganadi, duch kelgan muammolar va yo'qolib ketish xavfi ostidagi tillarni qayta tiklashda erishilgan muvaffaqiyatlarni o'rganadi. Unda tillar xilma-xilligi, globallashuvning tillarga ta'siri hamda jamoalar va tashkilotlarning til merosini jonlantirish uchun qo'llayotgan turli strategiyalari muhimligi ta'kidlangan.*

Аннотация*: В данной статье исследуются сложности возрождения языков, рассматриваются стоящие перед ними проблемы и достигнутые успехи в возрождении языков, находящихся под угрозой исчезновения. В нем подчеркивается важность языкового разнообразия, влияние глобализации на языки и разнообразные стратегии, используемые сообществами и организациями для возрождения своего языкового наследи*

Keywords: *language revitalization, language endangerment, cultural preservation, linguistic diversity, indigenous languages, immersion programs, community-based initiatives, educational initiatives, digital technologies, success stories, challenges, sustainability, ethical considerations.*

Kalit so'zlar*: tilni qayta tiklash, tilni xavf ostiga qo'yish, madaniyatni saqlab qolish, til xilma-xilligi, mahalliy tillar, immersion dasturlari, jamiyatga asoslangan tashabbuslar, ta'lim tashabbuslari, raqamli texnologiyalar, muvaffaqiyat hikoyalari, muammolar, barqarorlik, axloqiy mulohazalar*

Ключевые слова*: возрождение языка, языковая угроза, сохранение культуры, языковое разнообразие, языки коренных народов, программы погружения, общественные инициативы, образовательные инициативы, цифровые технологии, истории успеха, проблемы, устойчивость, этические соображения.*

Strategies for Revival:

* **Immersion Programs:** These programs provide intensive language learning environments, often using immersion schools and cultural events, to foster fluency and reawaken a love for the language. [13, 14]

* **Community-Based Language Programs:** Indigenous communities often lead revitalization efforts, focusing on grassroots initiatives, intergenerational learning, and the reintegration of the language into everyday life. [15, 16]

* **Educational Initiatives:** Integrating endangered languages into formal education systems is crucial. Developing bilingual education programs, teacher training, and culturally appropriate curriculum materials helps revive languages within the younger generation. [17, 18]

* **Digital Technologies:** Modern technology has emerged as a powerful tool. Online language learning platforms, language documentation projects, and social media campaigns provide vital resources and connect language learners and speakers globally. [19, 20]

Success Stories: Reviving a Language is a Journey, Not a Destination

Despite the challenges, there are inspiring success stories of language revitalization, proving that the fight for linguistic survival can be won.**Maori (Te Reo Māori) in New Zealand:** Through government policies, educational reforms, and dedicated community efforts, Te Reo Māori has witnessed a remarkable revival. It is now taught in schools, used in government and media, and celebrated as a symbol of national identity. [21, 22]

* **Hawaiian (ʻŌlelo Hawaiʻi):** The Hawaiian language, once on the brink of extinction, has experienced a resurgence thanks to immersion schools, language learning resources, and the establishment of a Hawaiian language immersion university. [23, 24]

* **Cherokee (Tsalagi Gawonihisdi):** The Cherokee language has been successfully revitalized through community-based programs, the development of a unique written form (Syllabary), and the integration of language learning into cultural events. [25, 26]

Building a Sustainable Future:

The success of these and other language revitalization projects hinges on a crucial understanding:

* **Community Ownership:** Empowering communities to take ownership of their revitalization efforts is essential. [27]

* **Government Support:** Policies that recognize, fund, and integrate endangered languages into formal education and societal structures are crucial for long-term success. [28]

* **Intergenerational Transmission:** Ensuring that the language is transmitted to younger generations is vital. This involves creating environments where children can learn and use the language naturally. [29]

* **Cultural Revitalization:** Language revitalization efforts must go beyond language itself and encompass the cultural traditions, practices, and stories associated with the language. [30]

Challenges Remain: A Call for Global Action

Despite the success stories, language revitalization faces ongoing challenges.

* **Addressing Root Causes:** Tackling the systemic causes of language loss, such as social and economic inequalities, and promoting linguistic diversity and tolerance are essential. [31]

* **Sustaining Efforts:** Language revitalization is not a one-time effort but a continuous process requiring sustained support, funding, and ongoing community engagement. [32]

* **Ethical Considerations:** Revitalization efforts must respect the cultural contexts and values of the language being revived, avoiding cultural appropriation and promoting authentic revitalization practices. [33]

The Importance of Linguistic Diversity:

Linguistic diversity enriches the human experience. Each language embodies a unique way of understanding the world, expressing emotions, and shaping cultural identities. The loss of a language is a loss for all of humanity. [34, 35]

Conclusion:

Language revitalization efforts are a testament to the resilience and spirit of communities around the world. By learning from their successes and addressing the challenges they face, we

can work towards a world where languages, like the vibrant threads of a tapestry, continue to weave their unique stories for generations to come.

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