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The role of rotation shift settlements for the sustainable development of Russia's Far North urbanization

ABSTRACT

Relevance. As permanent settlements in the Russian Far North suffer increasing depopulation, a "shadow" settlement framework is emerging through rotational labor migration. Despite nearly half a century of history, rotational shift work in the North remains largely spontaneous, posing risks to sustainable development.

Research Objective. This study examines rotational shift settlements as elements of the population settlement system in the Russian Far North and analyzes their role in transforming the region's settlement patterns.

Data and Methods. Data on rotational shift camps were gathered from various open web sources and the Ministry for the Development of the Far East and the Arctic. Information on permanent settlements was obtained from Rosstat (Federal State Statistics Service). The study employed systemic and comparative analysis methods.

Results. Unlike other Russian regions, rotational shift settlements in the Far North were initially integrated into the local settlement system. However, socio-economic changes in the 1990s disrupted the established Soviet model of integration, leading to the spontaneous development of these settlements. This unregulated growth poses increasing risks in such areas as ecology and social well-being.

Conclusions. To regulate the status of rotational settlements, legislative initiatives should be supported by updated conceptual and terminological frameworks. The urbanization process in this geostrategically important and environmentally vulnerable region must be controlled or at least predictable to ensure timely responses to emergencies.

KEYWORDS

Russian Far North, population settlement system, rotation shift method, rotation shift camp, base city/town.

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Роль вахтовых поселений в контексте устойчивого развития урбанизации Крайнего Севера России

АННОТАЦИЯ

Актуальность. На фоне обезлюдивания постоянных населенных пунктов на территориях Крайнего Севера России посредством вахтовой трудовой миграции продолжает формироваться «теневой» каркас расселения, оказывающий значительное влияние на их актуальную заселенность и освоенность. При этом «вахтовизация» Севера, несмотря на почти полувековую историю, до сих пор в значительной мере развивается стихийным образом, что представляет фактор риска для устойчивого развития северных территорий.

КЛЮЧЕВЫЕ СЛОВА

Крайний Север России, система расселения населения, вахтовый метод, вахтовый поселок, базовый город

Целью исследования является изучение специфики вахтовых населенных пунктов как элементов системы расселения населения Крайнего Севера России и анализ их роли в современных процессах трансформации опорного каркаса расселения северных регионов.

Данные и методы. Информация о вахтовых поселениях собрана из широкого круга открытых интернет-источников; также используются данные Министерства по развитию Дальнего Востока и Арктики, представленные по запросу. Сведения о постоянных населенных пунктах приводятся по публикациям официального сайта Росстата. В исследовании применены методы системного и сравнительного анализа.

Результаты. Выявлено, что в отличие от других регионов России вахтовые поселения Крайнего Севера изначально задумывались как неотъемлемая часть местной системы расселения населения. Однако вследствие социально-экономических трансформаций 1990-х гг. «советская» модель интеграции вахтовых населенных пунктов в местную систему расселения стала существенно расходиться с практикой, вследствие чего «вахтовизация» Севера в настоящее время в значительной мере развивается стихийным образом. С учетом все возрастающей роли вахтовой заселенности Севера ее стихийное, нерегламентированное и автономное по отношению к системе постоянного расселения населения развитие является потенциалом все возрастающего риска форс-мажорных ситуаций в самых разных областях – от экологии до социального благополучия территорий.

Выводы. Для урегулированности статуса вахтовых поселений, помимо законодательных инициатив, необходима актуализация соответствующего понятийно-терминологического аппарата, на который эти инициативы могли бы опираться, и регламентация подхода к самой специфике северной вахты как одной из форм урбанизации Крайнего Севера. А процессы урбанизации в таком геостратегически важном и в то же время экологически уязвимом регионе должны быть если не управляемыми, то хотя бы минимально предсказуемыми – для своевременной и адекватной реакции на форс-мажоры.

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БЛАГОДАРНОСТИ

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ДЛЯ ЦИТИРОВАНИЯ

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Россия́ дальнего Севера: роль городов в устойчивом развитии

Аннотация

Реальность: в России дальнего Севера постоянные жители уменьшаются, что приводит к тому, что трудовые ресурсы продолжают формировать «тень» постоянного проживания, что оказывает значительное влияние на развитие. Однако, несмотря на то, что в северных регионах «ротационная» система уже имеет многолетнюю историю, в значительной степени она остается в состоянии стихийного развития, что является одним из рисков устойчивого развития северных территорий.

Цели исследования: изучить особенности ротационной системы постоянного проживания в России дальнего Севера, и проанализировать ее роль в устойчивом развитии северных территорий.

Данные и методы: информация о ротационных поселениях собрана из широкого круга открытых интернет-источников; также используются данные Министерства по развитию Дальнего Востока и Арктики, представленные по запросу. Сведения о постоянных населенных пунктах приводятся по публикациям официального сайта Росстата. В исследовании применены методы системного и сравнительного анализа.

Результаты: выявлено, что в отличие от других регионов России ротационные поселения дальнего Севера изначально задумывались как неотъемлемая часть местной системы расселения населения. Однако вследствие социально-экономических трансформаций 1990-х гг. «советская» модель интеграции ротационных населенных пунктов в местную систему расселения стала существенно расходиться с практикой, вследствие чего «ротационизация» Севера в настоящее время в значительной мере развивается стихийным образом. С учетом все возрастающей роли ротационной заселенности Севера ее стихийное, нерегламентированное и автономное по отношению к системе постоянного расселения населения развитие является потенциалом все возрастающего риска форс-мажорных ситуаций в самых разных областях – от экологии до социального благополучия территорий.

Выводы: для урегулированности статуса ротационных поселений, помимо законодательных инициатив, необходима актуализация соответствующего понятийно-терминологического аппарата, на который эти инициативы могли бы опираться, и регламентация подхода к самой специфике северной ротации как одной из форм урбанизации дальнего Севера. А процессы урбанизации в таком геостратегически важном и в то же время экологически уязвимом регионе должны быть если не управляемыми, то хотя бы минимально предсказуемыми – для своевременной и адекватной реакции на форс-мажоры.

Ключевые слова

Россия́ дальнего Севера, постоянное проживание, ротационная система, ротационное поселение, ротационная заселенность, база

Ссылки

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北移具体方法。在这样一个具有重要地缘战略意义，同时生态环境脆弱的地区，城市化进程即使不可控，也必须至少是可预测的——以便及时、充分地应对不可抗力。

Introduction

Mobile settlement is not a new concept in itself, particularly among the indigenous peoples of the Far North where it has historically been prevalent. However, the industrialization of the 20th century has complicated and diversified this phenomenon, sparking discussions on the viability of integrating mobile and stationary settlements as the most effective approach to developing remote and sparsely populated Far Northern territories. This concept gave rise to industrial rotational settlements, originating with the establishment of the first oil rotation camp in Neftyanje Kamni in Azerbaijan in the late 1940s, and gaining significant traction in the 1970s during the development of the West Siberian oil and gas fields.

The economic rationale behind rotational work methods lies not only in reducing daily transportation costs across vast and inaccessible territories but also in minimizing expenses associated with constructing permanent settlements. This is achieved through the use of rapidly deployable modular buildings, reduced investments in social infrastructure (such as kindergartens, schools, clinics, and recreational areas), and circumvention of regulatory standards applicable to permanent settlements.

Following the Soviet era, the transition to a corporate paradigm of industrial development in the northern territories placed economic interests at the forefront, leading to a resurgence in rotational settlements on a scale surpassing the Soviet experience. Despite their significance in the population and territorial development of the Far North, rotational settlements remain largely overlooked in official population statistics, resulting in varying expert assessments of their impact. This “invisibility” poses risks as it complicates the harmonious interaction among social, economic, and environmental components crucial for sustainable territorial development.

This study aims to explore the reasons behind the “invisibility” of rotational settlements within the modern population settlement framework of Russia’s Far North, which contributes to the underestimation of the actual population in these regions. It also seeks to evaluate the scale of “rota-

tional urbanization” and its integration into the stationary settlement system.

The study’s objectives include the following:

- comparing Soviet and post-Soviet experiences in the development of rotational shift settlements in the Far North, identifying factors that deviated from the theory of rotational North development;
- identifying distinctive features of northern rotational settlements as part of an alternative path for northern urbanization;
- analyzing the evolution of rotational settlements in the context of dynamic and structural changes in the modern population settlement system of the Far North;
- assessing the current scale of “shift work” in Russia’s Far North and its significance as a compensatory mechanism for depopulation in these regions in the post-Soviet period;
- advocating for an updated classification approach to northern rotational settlements to develop an appropriate regulatory and accounting system.

Data and Methods

The active development and application of the rotational method of labor organization across various sectors of the economy and in diverse natural and climatic conditions have resulted in a wide array of implementations of rotational settlements. As a consequence, a rotational camp can range from temporary barracks or caravan camps accommodating a few dozen people for several weeks or months (typically utilized in geological exploration or small-scale construction projects) to modern cities equipped with comprehensive utilities and even social infrastructure.

These variations stem partly from the ambiguous legal definition of a rotational camp. Article 297 of the Labor Code of the Russian Federation defines a rotational camp as “a complex of buildings and structures designed to ensure the livelihoods of workers on a rotational basis during their work periods and rest between shifts.” Moreover, employers have the option to house shift workers “in dormitories and other residential premises adapted for these purpos-

es and funded by the employer.”¹ The criteria for being “designed to provide for vital needs” in relation to buildings/structures for housing shift workers are not specified, so a heated car also fits this broad definition.

A more revealing perspective may be gained from the urban planning approach to rotational settlements, which categorizes them based on practical considerations such as size (ranging from small villages accommodating 50–100 workers to large and super-large settlements hosting 3,000 or more people), mobility (either stationary or mobile, where camps are either fixed in place or periodically relocated as work progresses), and duration of existence (spanning from less than six months to over 50 years)²

In the context of studying the settlement system, “long-term” stationary rotational camps are of particular interest. Considering the population of northern territories and their anthropogenic impact, all types of rotational settlements should be considered. However, gathering even estimated data on the number and distribution of the shift rotational population in the Far North is currently a challenging task. This difficulty extends to consolidated statistical accounting, which is hindered by the corporate nature of rotational settlements and their virtual “invisibility” to official statistics.

Further complicating the situation are instances where permanent settlements in the Far North transition to rotational or partially rotational status without an official change in designation. For example, the fully-fledged rotational town of Sabetta in the Yamal-Nenets Autonomous District was established “from scratch” on the site of the earlier abolished permanent settlement of the same name in 2002. Similarly, the village of Varandey in the Nenets Autonomous District was founded on the location of a resettled urban-type settlement that closed in 2000.

This phenomenon also occurs in cases like the town of Tumanny in Murmansk Region, where the local mainstay enterprise, the Serebryansky hydroelectric power station chain, shifted to rota-

tional work in 2011, leading to a covert transformation to a rotational model.

Thus, due to the lack of accessible statistical data on rotational settlements in the Far North, the analysis of this research problem will focus on individual regions or even specific settlements rather than the entire Far North. In this context, the term “Far North” refers exclusively to territories directly classified as such, excluding those equated to them³.

Information and analytical materials of the Federal State Statistics Service of the Russian Federation (Rosstat) are used as a statistical basis for research on the size of the permanent population of the Far North⁴. As for the size of the rotational population of the northern regions, due to the lack of consolidated statistical data, information is sourced from open online resources (news outlets of regions and municipalities; official documents of the administrations of individual administrative-territorial entities, posted in the public domain; corporate websites of companies owning rotational camps, etc.), data from the Ministry for the Development of the Far East and the Arctic, provided upon request, as well as the authors’ estimates based on the above-mentioned materials. Due to such a “patchwork” nature of the data, its relevance fluctuates between the end of 2020 and the beginning of 2022, which may somewhat distort their comparability, but, in our opinion, does not affect the conclusions about the current trends.

Literature Review

The development of northern territories has been ongoing for over half a century, yet this topic continues to generate numerous questions, attracting interest from urban planners, economists, geographers, as well as sociologists, psychologists, lawyers, and doctors. Russia, with its

¹ Labor Code of the Russian Federation No. 197-FZ of 30.12.2001 (revised on August 4, 2023, with amendments effective from September 1, 2023).

² See, for example: Sotnikova O.A., Bogatova T.V. & Kuznetsov R.N. (2023). Planning and organization of construction in difficult conditions: textbook for secondary vocational education. Moscow: Yurayt Publishing House, 131.

³ In this study, “regions of the Far North and equated areas” refer to territories designated under Government Decree No. 1946 of November 16, 2021. This decree outlines these regions for the purpose of providing state guarantees and compensation to individuals working and residing there, and also addresses the annulment of specific acts of the Russian government and former USSR’s Council of Ministers in these territories.

⁴ The size of population in the Russian Federation by municipal units as of January 1, 2022. Statistical Bulletin. (2023) Moscow: The Federal Service for State Statistics (Rosstat). Available at: <https://rosstat.gov.ru/compendium/document/13282> (Accessed: 10.08.2023).

vast expanse of high-latitude territories and extensive experience in anthropogenic development of the North, is particularly keen on studying these related issues.

Several Russian studies specifically examine the theory and practice of rotational development in the Far North through a spatial-temporal approach (Anisimovets, 2017; Zakharov & Efimova, 2017; Pechkin, Krasnenko & Pechkina, 2023).

A study on the history of urban planning policy in Western Siberia shows that an important contribution to the paradigm of rotational development in resource-based regions of the North stemmed from three conferences held in Tyumen in 1966, 1968, and 1969. These conferences focused on urban development issues in the oil and gas-rich areas of Tyumen Region (Stas, 2016). The materials from these conferences, even fifty years later, continue to hold significant discussion potential. They not only propose specialized urban planning solutions for permafrost and swampy areas but also outline strategic concepts for rapidly establishing essential infrastructure to support settlements in the harsh Siberian North.

It is noteworthy that, owing to a comprehensive interdisciplinary approach, Soviet research on rotational development in the Far North remains highly relevant in shaping contemporary theoretical frameworks. For instance, in 1977, the LenNIIP of Urban Development published a monograph addressing settlement challenges in northern regions (Myakinenkov et al., 1977). One section of this work discussed the role of rotational shift methods in developing resource areas, including an analysis of their application in Canada and the USA (Alaska) for northern oil and gas field development. Subsequently, in 1982, the same institute published another monograph solely focused on rotational and expeditionary methods in urban development of resource-rich regions (Milenina & Morozova, 1982). The first chapter of this monograph extensively examines the role of rotational settlements within the broader settlement system and their interactions with permanent settlements.

In this period, drawing on accumulated practical experience in colonizing uninhabited areas, the rotational method began to be differentiated into the rotational method itself and the expeditionary rotational method, with the latter forming a distinct category. The concept of rotational work specifically applied to shorter intraregional shifts,

such as shifts every 10 days, was devised due to regular transport connections with base cities.

A notable characteristic of the expeditionary rotational method was the considerable geographic distance between the base city and the rotation shift location, often necessitating the recruitment of personnel from other regions of the country. This method primarily involved one-time, albeit intensive, fieldwork and found extensive application in geological exploration (a practice still prevalent in the construction industry today). By then, the expeditionary rotation method had garnered significant interest due to its potential capabilities, especially as the rapidly expanding oil and gas sector in Western Siberia outpaced urban development efforts in the northern regions (Khaitun, 1982).

To date, the difference between the rotational and expeditionary rotational method in the context of northern shift work research is often a secondary issue, since the expeditionary rotational method is so much superior in applicability to the rotational method that it makes the latter practically an exception rather than a common occurrence. The reason for this was a large-scale depopulation of the territories of the Far North during the 1990s crisis, which critically reduced the potential for using intraregional shifts. In addition, due to the strong regional differentiation between the incomes of the economically active population, interregional rotation turns out to be more profitable for large businesses operating in the North. Moreover, interregional rotation is currently accompanied by intercountry rotation – due to the expansion of the rotational labor market beyond the state border.⁵ These changes mean that, despite the value of scholarly writings from the 1960s to the 1980s on the subject of northern shift work, some aspects of these writings are now dated.

International studies on shift work in northern regions can only partially serve as a theoretical basis for studies of the Far North of Russia due to the much smaller area and population of circumpolar territories outside Russia, Canada being the only exception. However, even the Ca-

⁵ For instance, the share of interregional rotation shift in the overall number of the region's shift workers in the Yamal-Nenets Autonomous District in 2019 was 75.4% with an additional 6.2% made up by foreign workforce. Thus, intraregional rotation shift accounted for only a humble 18.4% (Loginov et al., 2020).

nadian North has relatively few settlements and a smaller population, both permanent and rotational, compared to the Russian North. Therefore, multidisciplinary studies of northern shift work in Canada focus primarily on specific issues such as the psychological and social aspects of interactions among visiting shift workers and with the local population (Jensen & Sandström, 2020; Saxinger, 2021), the impact of rotational work on workers' mental health (Dorow et al., 2021), the role of rotational migration in improving employment and welfare in peripheral regions (Ryser et al., 2016; Vodden & Hall, 2016), and the effects of digitalization on rotational work (Storey, 2023).

In general, international studies of northern rotational shifts often examine similar issues related to the application of rotational labor methods in sparsely populated, resource-rich regions. For instance, some Canadian authors conduct comparative studies of shift work using examples from Australia, South Africa, and other non-polar countries (Storey, 2010; Storey, 2016).

Regarding Russia, the increased interest in the Arctic and the Far North over the past couple of decades has revived important issues related to population settlement in these regions. This is particularly true for the complex processes involved in transforming the northern settlement framework and the demographic characteristics of this macroregion's development in the post-Soviet period (Baburin & Zemtsov, 2015; Zamyatina & Goncharov, 2020; Pilyasov & Putilova, 2020; Bazhutova, 2022). However, in these large-scale studies, the phenomenon of northern shift work is mentioned, if at all, only as an additional aspect rather than a primary subject (see, for example, Pilyasov, 2019; Zamyatina, 2020; Breslavsky, 2022; Pruss & Sharypova, 2022; Stepus', Gurtov & Averyanov, 2022).

A. N. Silin examines northern shift work as a specific subject. However, despite the mention of "socio-spatial discourse" in the title of his monograph (Silin, 2021), the focus remains more on the social aspects of rotational labor in the North than on the spatial ones.

Studies directly addressing shift work in the context of the spatial development of the Russian North are rare. An indicative example of the discrepancy between "official" ideas about the current development of the Far North and the real situation on the ground, specifically in the Ne-

nets Autonomous District, is described by N. Yu. Zamyatina and A. N. Pilyasov (Zamyatina & Pilyasov, 2019). However, the paper itself is devoted, as stated by the authors, to "the elaboration of a new theory for the development of the Russian North and Arctic," making this example a related issue but not the direct subject of the study. In general, the problems of modern shift work in the Far North are more often found in highly specialized urban planning (Blagodeteleva, 2017), medical and psychological (Korneeva & Simonova, 2021) or financial and legal studies (Weller & Kokhanova, 2021) respectively, devoted to the issues of arranging rotation camps on the ground, medical risks of the northern shift work or the practice of calculating wages and providing special benefits to rotation shift workers.

A number of researchers, as noted above, focus on the social characteristics of the rotational shift population of the Far North (Stepus' & Gurtov, 2023). Recently, there has been a surge of interest in the administrative and legal regulation of rotational settlements, driven by issues that were exacerbated during the pandemic (Popova, 2021). As rotational development in northern territories continues to expand, the number and interconnectedness of issues to study are also increasing. One of the most controversial and least addressed topics, as mentioned at the beginning of our paper, is the integration of rotation camps into the permanent settlement framework.

Results and Discussion

Rotation shift camps as elements of the urban population settlement system: historic overview. The history of mass rotational development of the Far North, rather than single rotational settlements, begins in the 1960s with the discovery and early industrial development of the richest hydrocarbon deposits in Western Siberia. It's not surprising that most scholarly works from the 1960s to the 1980s on rotational labor in the North focused on this region. The most heated discussions centered on creating an optimal settlement system, including many industrial settlements linked to scattered mineral deposits in vast, inaccessible areas.

Specialists from the State Institute of Urban Design (GIPROGOR) proposed a "base city – rotational camp" scheme, which involves an intra-regional shift system where residents of large cities in the region work on a rotational basis (2–3

weeks) at local oil and gas fields. This means a stationary settlement framework, with key points in relatively large urban settlements, is supported by a more dispersed network of mobile settlements that depend on the stationary ones (Stas', 2016).

This approach initially worked only nominally, as the vast undeveloped spaces of northern Western Siberia lacked a sufficient number of base cities or urban settlements, especially in the northernmost regions. Consequently, many rotational camps and villages in the Khanty-Mansi Autonomous District, established in the early stages of rotational shift work, soon became permanent settlements. For example, the city of Raduzhny was founded as a rotational camp with the start of the Varieganskoye field development in 1973 and received city status in 1985. Similarly, the cities of Lyantor and Pokachi, founded as rotational camps in 1978, were granted city status in 1992. The urban-type settlement of Poikovsky, established as a rotational camp in 1964, received urban-type settlement status in 1968, and Novoagansk, founded as a rotational camp in 1966, was granted urban-type settlement status in 2004.

The formation of a modern population settlement system in northern Western Siberia, particularly in the Khanty-Mansi Autonomous District, illustrates the saying, "there is nothing more permanent than temporary." This sentiment remains relevant today. In the summer of 2021, media in the Khanty-Mansi Autonomous District reported the decision to demolish a GPP village (that is, a village established near a gas processing plant) in Surgut District⁶. This village, initially a shift camp for construction workers three decades ago, gradually became a permanent settlement. Despite this transition, it had remained classified as a rotation camp for thirty years, with unclear status even to local administration.

Returning to the concept of the "base city - rotational camp," the discovery of more northern gas fields in Yamal led to the proposal to construct rotational camps in the format of "hotels" with nearby airfields, thereby transforming intra-regional rotations into interregional ones (Stas', 2014). This approach aimed not only at the accel-

erated development of remote northern territories but also at addressing the health impacts of long-term residence beyond the Arctic Circle on the workforce and the rising costs of constructing base cities. Consequently, the Yamal-Nenets Autonomous District became the first northern region of Russia to plan for long-term stationary rotational settlements without intending them to become permanent. Today, it hosts the most populous rotational cities and towns in the country.

The practice of developing northern resource territories, contrary to the proposed strategy of "base city - shift camp in one region," eventually led to a crisis in the concept of integrated development of rotational shift camps and permanent settlements. This shift is reflected in the subsequent separate study of the settlement system of the Russian Far North and individual issues related to the development of rotational settlements. Attempts to correct the system by dividing it into rotation and expedition camps were disrupted by the events of the 1990s and the transition to a market economy, which altered the model proposed under the Soviet economic system.

The most significant impact on the collapse of the "Soviet" territorial concepts of using rotational labor in the Far North was the shift from a state-planned to a market-corporate developmental paradigm. This shift weakened the horizontal connections between rotational camps and other regional settlements in favor of strengthening vertical ones. As a result, the focus moved from the "shift - base city" link (whether within the same region or outside it) to the "shift - head/regional office of the corporation to which the village belongs" link.

Rotation camps, in fact, were often separated from the local settlement system, even in the literal sense: the territories of corporate rotation camps - guarded and closed - are more of enclaves of companies than elements of the local settlement system. This separation is also reflected in statistical data, or rather absence thereof: the number and population of rotational camps in the resource-producing regions of Russia is growing year by year (only one company, Rosneft, according to the official website for 2020, owned 117 rotational camps⁷ - not counting mobile carriage

⁶ "An obscure settlement to be demolished in Surgut District". Siapress.ru information and analytical website, 31.08.2021. Available at: <https://siapress.ru/news-surgut/107665-vahtoviy-poselok-gpz-v-surgutskom-ray-one-prekratit-sushchestvovanie> (Accessed: 10.08.2023).

⁷ Countering COVID-19: a systematic approach of PJSC NK ROSNEFT. Information bulletin on the official website of PJSC NK ROSNEFT. Available at: <https://www.ros->

towns), but official statistics state exclusively the stationary population of the North, which, albeit at a much slower pace than in the 1990s, continues to decline. In reality, the depopulation of the Far North is partly offset by the establishment of a network of rotational settlements, particularly the long-term “stationary” rotation camps mentioned earlier.

Rotation camps as a form of mobile settlement: contradictions in definition. The very definition of a rotation camp implies that it is so called because of the temporary residence of residents working on a rotational basis, and not because of the temporary existence of the village itself. “Rotation camps are a complex of residential, cultural, welfare, sanitary and utility buildings and structures designed to ensure the livelihoods of workers working on a rotational basis during their rest period on shift, as well as maintenance of construction and special equipment, vehicles, and storage of inventories values”⁸. However, the definition may be narrowed to fit the specific characteristics of a particular industry, given the widespread use of rotational shift work across various sectors of the economy and its diverse objectives.

“The rotation method is used when the place of work is significantly removed from the place of permanent residence of workers or the premises of the employer in order to reduce the time for construction, repair or reconstruction of industrial, social and other facilities in uninhabited, remote areas or areas with special natural conditions, as well as for the purpose of carrying out other production activities” (Article 297 of the Labor Code of the Russian Federation).⁹ Hence, in construction, for example, a rotation camp is a “temporary settlement designed for accommodation and social services for those working on a rotational basis”¹⁰, which is logical given the need to

use a rotational method of work in the industry in order to speed up the work process, rather than due to natural and climatic conditions or lack of transport infrastructure.

It is worth noting that the Urban Planning Code of the Russian Federation, unlike the Labor Code, virtually does not comment on or regulate rotational camps: they are mentioned only in Article 15 (and in a very narrow sense—as logging camps) in the context of transferring them to a permanent status¹¹. However, for the extractive industries, and especially when working at high latitudes, the synonym for the concept of shift worker is still one “with a rotation of the population” rather than often not “temporary”, which can also be confirmed at the level of local regulatory documents¹². It is not surprising that individual rotational camps in the Far North now have a history that goes back several decades: for example, the rotational camps of Yamburg (Yamalo-Nenets Autonomous District) and Danilovka (Khanty-Mansi Autonomous District) were founded in the early 1980s and are still operating successfully, that is, the period of their operation, which has already spanned four decades, may well rival and even exceed the period of existence of individual stationary towns of the Far North, currently closed (see Table 1).

However, the Soviet approach to northern development included a long-term shift strategy with a larger time lag. Workers of the North were attracted by high salaries and often moved to more favorable areas upon retirement. This means their goals were similar to those of current shift

neft.ru/Investors/ESG/Vklad_v_dostizhenie_Celej_OON_v_oblasti_ustojchivogo_razvitiya_case_studies/Protivodejstvie_COVID-19_sistemnij_podhod/ (Accessed: 10.08.2023).

⁸ Resolution of the State Committee for Labor of the USSR, the Secretariat of the All-Union Central Council of Trade Unions, the Ministry of Health of the USSR No. 794/33-82 of 31.12.1987 (revised on 17.01.1990, as amended of 19.02.2003) “On approval of the Basic Provisions on the shift method of organizing work.”

⁹ Labor Code of the Russian Federation No. 197-FZ of 30.12.2001 (revised on August 4, 2023, with amendments effective from September 1, 2023).

¹⁰ Methodological recommendations for organizing the construction of objects by mobile units and the use of

a rotational method of organizing work (2019). Moscow: Ministry of Construction and Housing and Communal Services of the Russian Federation; FAU “Federal Center for Standardization, Standardization and Technical Assessment of Conformity in Construction”, 253. Available at: https://www.faufcc.ru/upload/methodical_materials/mp31_2019.pdf (Accessed: 10.08.2023).

¹¹ Urban Planning Code of the Russian Federation No. 190-FZ of 29.12.2004 (revised on August 4, 2023, with amendments effective from September 1, 2023).

¹² See, for example, Decision №6-40 of 19 September 2017 “On approval of urban planning standards for the municipal entity Neryungri District of the Republic of Sakha (Yakutia)”. Available at: http://www.neruadmin.ru/upload/iii-soziv/40_sessia/reshenie-6_40.pdf (Accessed: 10.08.2023).

¹³ The 1989 All-Union Population Census. RSFSR urban population size, Russian territorial entities, urban settlements and city districts by gender Demoscope Weekly. Available at: http://www.demoscope.ru/weekly/ssp/rus89_reg2.php (Accessed: 10.08.2023).

Table 1

Examples of liquidated urban-type settlements in the Far North regions existing for less than 40 years

Name of permanent settlement	Region	Industry	Period of operation (founded – closed)	Population size as of 1989, thousand people
Baranikha urban-type settlement	Chukotka AD	gold mining	1962-1999	2.0
Vstrechniy urban-type settlement	Chukotka AD	gold mining	1965-1998	1.6
Lenngadskiy urban-type settlement	Chukotka AD	gold mining	1966-1998	3.6
Komsomolskiy urban-type settlement	Chukotka AD	gold mining	1957-1998	3.8
Chigichinakh urban-type settlement	Magadan Region	gold mining	1959-1996	N/A
Adygalakh urban-type settlement	Magadan Region	gold mining	1953-1994	0.3
Perekatniy urban-type settlement	Republic of Sakha (Yakutia)	rock crystal mining	1961-1998	N/A
Tenkeli urban-type settlement	Republic of Sakha (Yakutia)	tin production	1966-1995	2.9
Kular urban-type settlement	Republic of Sakha (Yakutia)	gold mining	1963-1998	4.7

Source: compiled based on the 1989¹³ All-Russian population survey data and web-based open-source information.

workers, but the duration of their “shift” was several years instead of months. This longer duration required accommodating not only the workers but also their families, necessitating developed social and urban infrastructure.

The 1990s crises revealed the unprofitability of such long-term shifts for the state, making initially simple shift camps like Yamburg and Danilovka more stable than some quasi-rotational settlements near mineral deposits. This means that many modern rotational settlements in the Far North have evolved into permanent settlements with population rotation, maintaining or even growing their numbers over time.

If we consider a city as a populated area that has reached a certain size of population, employed for the most part outside agriculture, then rotational camps are definitely close to the concept of urban settlements, or more precisely, urban-type settlements. Thus, they are currently replacing stationary urban settlements, which are rapidly disappearing from the map of the northern territories (from 1989 to 2020, their number fell by almost 50%)¹⁴. The population of such settlements can compete with the population not only of urban settlements, but even of northern permanent cities: for example, the number of “rotational” population of Sabetta in the Yamal-Nenets Autonomous District for 2021 was estimated at 33.8

thousand people (for comparison, the permanent population of the capital of the Yamal-Nenets Autonomous District – Salekhard – was 52 thousand people as of January 1, 2022). Of course, the case of Sabetta can be called unique, but nevertheless, rotational settlements with a population of over 1 thousand people in the Far North of Russia is not at all uncommon. Moreover, they are often one of the largest populated areas in the district and yet are not reflected in any way in official statistics. A logical question arises here: to what extent is the Far North populated at present?

Rotation camps and the dynamics of the population settlement system in the Far North: the formation of a rotational settlement framework. If we revisit the issue of compensating for the outflow of the permanent population with shift workers, it is interesting to consider the increasingly rotational nature of the Far North’s settlement framework. Some dissolved urban-type settlements have only exhausted their potential as permanent settlements, not as populated areas. In many cases, current rotational settlements are located on or near the sites of these former villages.

For instance, in Sabetta, a new rotational settlement was built from scratch on the site of a previously eliminated permanent settlement. Alternatively, a “low-budget version” of organizing rotational settlements involves using the existing housing infrastructure of a dying or recently liquidated settlement.

¹⁴ Calculated by using the data of the 1989 All-Union Population Census and the 2020 All-Russian Population Census.

Table 2

Population of individual rotation shift camps compared to population of major permanent settlements

Rotation Shift Camp	Industry	Number of shift workers, thousand people	Region	Municipal Entity (ME)	Number of permanent residents of major MEs settlements as of 1 Jan. 2022	
					Settlement	Population, thousand people
Grib diamond mine	diamond mining	1.0	Arkhangelsk Region	Mezensky Municipal District	Mezen' town	3.1
Polyus Verninskoye rotation shift settlement	gold mining	1.5	Irkutsk Region	Bodaybinsky Municipal District	Bodaybo town	8.9
Polyus Krasnoyarsk industrial district	gold mining	5.6	Krasnoyarsk Region	Severo-Yeniseysky Municipal District	Severo-Yeniseysky urban-type settlement	6.2
Yurubcheno-Tokhomskoye field (YuR-5 rotation shift village)	oil extraction	3.1	Krasnoyarsk Region	Evenkiysky Municipal District	Tura settlement	5.3
Vankor production area	oil extraction	2.7	Krasnoyarsk Region	Turukhansky Municipal District	Igarka town	4.1
Pavlik	gold mining	1.7	Magadan Region	Tenkinsky Urban District	Ust-Omchug urban-type settlement	2.7
Nakyn	diamond mining	1.7	Republic of Sakha (Yakutia)	Nyurbinsky Municipal District	Nyurba town	9.7
Kupol	gold mining	1.6	Chukotka Autonomous District	Anadyrsky Municipal District	Ugolnye Kopi urban-type settlement	4.2
Novozapolyarniy	gas extraction	4.0	Yamal-Nenets Autonomous District	Tazovsky Municipal District	Tazovskiy settlement	8.4
Sabetta	gas liquefaction	33.8	Yamal-Nenets Autonomous District	Yamalsky District Municipal District	Yar-Sale village	7.4

Source: compiled based on the official Rosstat¹⁵ data and the Ministry for the Development of the Russian Far East and the Arctic data.

The second option, where a rotation camp occupies a legally liquidated town, is common among small gold mining cooperatives in the Chukotka Autonomous District, Magadan Region, and the Republic of Sakha (Yakutia). For example, the miners' *artel* Shakhtar uses Leningradsky (Chukotka Autonomous District) as a rotation base, and the miners' *artel* Omoloy uses Vlasovo (Yakutia), both of which were closed in 1998. These are not isolated cases; abandoned urban settlements are often repurposed as "low-budget" corporate camps.

The third option combines elements of the first two: the permanent town is eliminated, the population resettled, but the village continues to oper-

ate on a rotational basis. Unlike the second option, where deteriorating infrastructure is used, the enterprise-holder of the village aims for long-term use and may reconstruct and expand the settlement. An example is Neftepechorsk (Komi Republic), which ceased to be permanent in 2008 and became a rotational camp for LUKOIL-Ukhtaneftegaz.

Thus, as the network of permanent settlements thins, a shadow rotational framework is forming in the northern territories, particularly

¹⁵ The number of population of the Russian Federation by municipal units as of January 1, 2022. Statistical Bulletin (2023) Moscow: Federal State Statistics Service. Available at: <https://rosstat.gov.ru/compendium/document/13282> (Accessed: 10.08.2023).

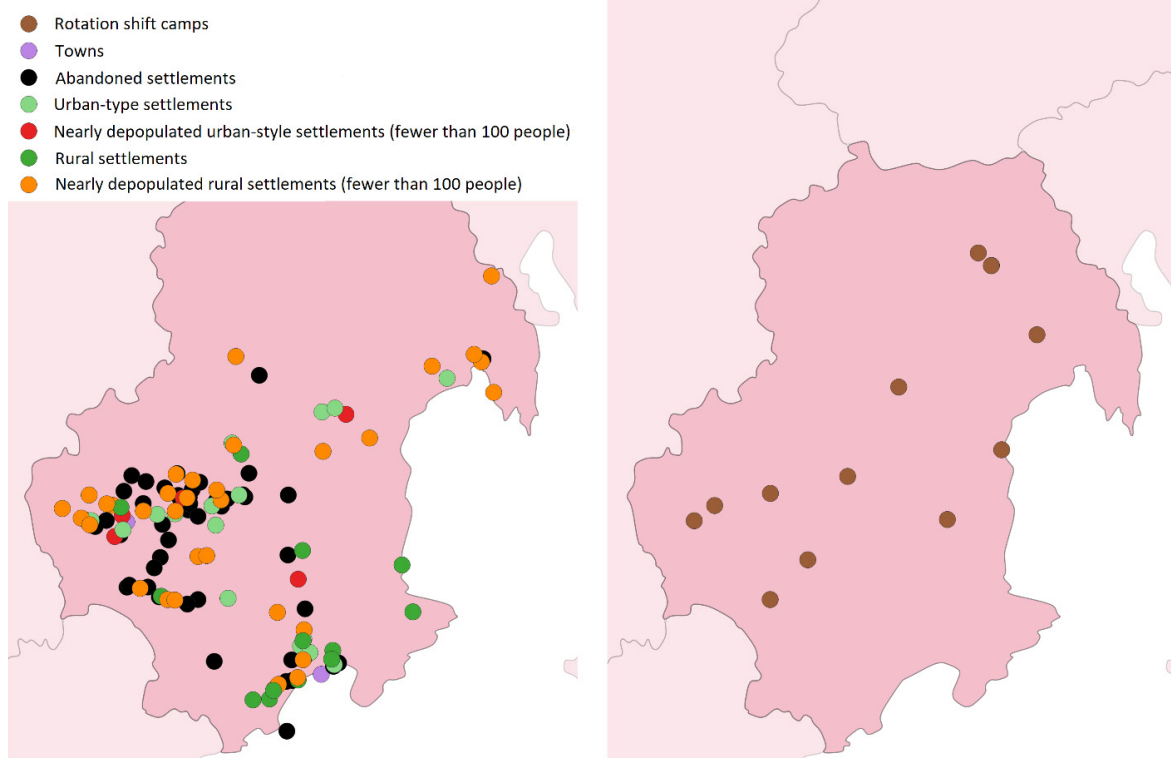


Figure 1. Dynamics of the settlement system in the Magadan region by settlement type, 2002–2020
(left: permanent settlements; right: rotation camps)

Source: constructed based on the data of All-Russian population surveys of 2002¹⁶ and 2020¹⁷

over the past couple of decades. This can be seen in a cartographic representation of Magadan Region, one of the northern regions most affected by permanent population outflow (see Fig. 1).

In Magadan region today, there are only two cities—Magadan and Susuman (marked in purple on the map). The rest of the settlements consist mostly of towns and villages, which stretch in a horseshoe shape along the federal highway Kolyma connecting the two cities. However, even this route no longer suffices to sustain many permanent settlements in the region. The map prominently displays black (deserted or resettled settlements between the 2002 and 2020 censuses) and red-orange (endangered populated areas likely to become extinct soon) colors.

¹⁶ The 2002 All-Russian Population Census. Urban population size, Russian territorial entities, urban settlements and city districts by gender. Demoscope Weekly. Available at: http://www.demoscope.ru/weekly/ssp/rus02_reg2.php (Accessed: 10.08.2023).

¹⁷ The 2020 All-Russian Population Census. Vol. 1. Population size and settlement. RF Federal State Statistics Service. Available at: <https://rosstat.gov.ru/vpn/2020> (Accessed: 10.08.2023).

The actual and relatively stable pattern of population distribution is depicted in green, which is sparse and forms clusters rather than a network of settlements. When combining the placement patterns of permanent and rotational settlements, the anthropogenic development of the region's territory extends extensively and less centrally, effectively populating officially “deserted” territories.

Conclusions

The enduring nature of this phenomenon points to the fact that rotational camps in the Far North are not merely a method of labor deployment but a distinct form of urbanization adapted to extreme natural and climatic conditions. As a result, a subsystem of rotational settlements has emerged in the settlement system of the Russian Far North. This subsystem mirrors the permanent settlement system, which is thinning due to outward migration, but operates on an accelerated functional cycle. Moreover, these rotational settlements often develop in an enclave-like manner, characterized by corporate isolation. Verti-

cal connections with the head or regional offices of the owning companies are typically more pronounced—and sometimes the only viable connections—compared to links with nearby permanent settlements or other rotation camps. A significant challenge is the “invisibility” of this rotational settlement system in official statistics, despite its substantial impact on the population of the Far North. Even regions hosting these camps struggle to accurately count rotational workers.

A logical outcome of this “shadow” development was a string of force majeure events happening in rotational camps during the COVID-19 pandemic, which required tapping federal and regional resources to solve emergency medical problems (as it happened, for example, in the village of Belokamenka, Murmansk region¹⁸) or to contain social unrest (the most famous case is the riot at Gazprom’s Chayandinskoye field in the Republic of Sakha (Yakutia)¹⁹).

On the plus side, all these incidents brought the problem of the unsettled status of rotational camps in the Far North to the front pages of the media outlets and provoked a discussion about the need to improve the legislative framework in this area. In the current year 2023, deputies of the State Assembly of the Republic of Sakha (Yakutia) presented a draft federal law “On the interaction of organi-

zations using the rotational method of organizing work and public authorities of the constituent entities of the Russian Federation and amendments to certain legislative acts of the Russian Federation.” At the same time, Chairman of the Magadan Regional Duma Sergei Abramov, in comments to the draft law, noted that the text does not contain the concept of “seasonal rotation camp”²⁰ (which is critical for, say, the gold mining industry, where placer gold is usually mined in the summer). In other words, here we see another problem, namely: the lack of a unified substantive classification of rotational camps against their increasingly significant differentiation.

Current urban planning classifications of rotational camps, as mentioned earlier, consider mobility, population, and operational duration but do not adequately address realities such as “mixed” settlements (inhabited by both permanent residents and shift workers) or rotational camps established in former permanent settlements (using existing infrastructure designed for urban settings rather than rotational purposes).

The shift towards urbanization in the Russian Far North is a well-established, long-term trend, strengthened by its resilience during the economic crisis of the 1990s and its adaptive flexibility to changing circumstances. Therefore, this research topic warrants equal scrutiny from Russian scholars as classical northern urbanization.

¹⁸ Serga E. *Resuscitation in a camping tent. How does an airmobile hospital work in the Murmansk oblast?* TASS News Agency. 20.04.2020. Available at: <https://tass.ru/v-strane/8268269> (Accessed: 10.08.2023).

¹⁹ *At the Chayandinskoye field shift workers rebelled, demanding improved living conditions amid detected Covid-19 cases.* Yakutia.info. 28.04.2020. Available at: <https://yakutia.info/article/194701> (Accessed: 10.08.2023).

²⁰ Sergey Abramov: *Undoubtedly, the bill on rotation shift camps conceptually should be adopted.* MagadanMedia.ru. 14.06.2023. Available at: <https://magadanmedia.ru/news/1522816/> (Accessed: 10.08.2023).

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