Ukrainian Labor and Siberian Oil in the Late Soviet Empire[1]

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Abstract: *The development of oil and gas fields in West Siberia was a major event in late Soviet history. Exporting Siberian oil and gas, the Soviet Union secured its financial solvency, received food supplies, and deferred the collapse for two decades. First privatized and then re-nationalized, the same fields have provided the means of survival for the post-Soviet Russian Federation. In this article, we submit that the discovery and early development of these gigantic assets was an imperial affair. Many workers and managers of Siberian oil and gas fields arrived there from distant Soviet lands that had had experience with oil, such as Ukraine, Azerbaijan, Tatarstan, and Bashkiria. While some of these workers were individually recruited, many others came to Siberia as the members of institutional units that kept their allegiances to their homelands. Working in shifts, they pursued a difficult compromise between the centralized channels of profit-seeking and culturally specific patterns of earning and spending. Based on archival work in West Ukraine and interviews with the former Ukrainian "shifters," this essay explores the changing rules of this imperial practice. The relevant ministries in Moscow, some of them led by ethnic Ukrainians, boosted the Ukrainian contribution when the oil and gas production in West Siberia was coming into crisis. Later, the early post-Soviet privatization minimized the*

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institutional involvement of Ukrainian business. Contributing to the imperial turn in Soviet Studies, this essay documents the immense gains and terminal risks that are intrinsic to a resource-based imperial economy.

In early spring of 1980, Nikolai Mal'tsev, Soviet Minister for Oil Industry, got an unexpected telephone call: he was invited to attend a meeting of the Politburo, an event well above his level. As a result of that meeting, thousands of construction workers and oilmen from Ukraine and other European parts of the Soviet Union would find themselves in the Siberian marshes. Their labor was voluntary, contract-based, and relatively well-paid. Sometimes their work led to permanent migration, but it was mostly based on "shifts," which entailed flying in and out every two weeks, 4,000 kilometers, back and forth across Eurasia.

Combining oral history with close reading of documentary sources, this essay follows the Siberian adventure of West-Ukrainian workers in the 1970s–'90s. In 2017–2018, we interviewed 15 former oilmen in Ivano-Frankivs'k who were involved in the shift work in Siberia. We also talked to local geologists, some of them professors at the Ivano-Frankivs'k University of Oil and Gas. Senior Ukrainian journalists shared with us their memories and documentation about the Ukrainian shift work in Siberia. Relying on our new and multifaceted sources, we have come to the following reconstruction of these significant but forgotten events.

Oil for Food

The most powerful body of the Soviet empire, the Politburo's decision-making was not subject to any limits. At the meeting in March 1980, about a dozen members, most of them well into their seventies, discussed the situation regarding the food supply of the enormous country. Grain shortages were a chronic problem for the socialist land, which was far more successful with oil industry than with agriculture. Since the collective farms failed to produce enough grain, a solution was found in buying it from the farmers of the capitalist West. Exchanging oil for grain became the strategy for

survival. Sales of oil were growing fast but purchases of food were growing much faster. Year after year, the payments for foreign grain, meat, clothing, and footwear consumed the greater part of the profits that the Soviet Union obtained from oil and gas trade. In physical volumes, from 1970 to 1985 the Soviet purchases of grain from foreign supplies increased twenty-fold.**2** But the growth of oil exports also needed large amounts of capital and labor. In 1970–86, the growth rate of capital investments in the oil and gas industry was three to five times higher than in the Soviet economy as a whole.[3]

This is why Leonid Brezhnev, the head of the Communist Party, instructed Nikolay Mal'tsev, the Minister for Oil Industry, to increase the oil output by 10 million tons. This target was not exceedingly high. The plan for 1980 was set at 315 million tons, and the unused capacity of Mal'tsev's industry was huge. More than a thousand derricks in Siberia stayed vacant because of the shortage of personnel. Natural resources were available, but human capital was in short supply. Having briefed the Politburo about these problems, Mal'tsev offered a solution: he asked the Party leaders to let him use not only the organizations of his Ministry but also those that belonged to the republics of the Soviet Union. He wanted the Soviet republics to help constructing roads, building houses, and servicing drills in Siberia.[4]

This was a moment when the price of oil on the world market was increasing nicely, and the production in Western Siberia was increasing too. In the decade from 1970 to 1980, Soviet oil output doubled in tons of oil but increased more than six-fold in dollars,

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2 Natalya Chernyshova, *Soviet Consumer Culture in the Brezhnev Era* (New York: Routledge, 2013), 31.

3 Sergei Yermolaev, "Formirovanie i razvitie neftegazovoi zavisimosti Sovetskogo Soiuza," Carnegie Moscow Center, 31 March 2017, http://carnegie.ru/2017/03/31/ru-pub-68448#Часть%20I.%20Воздействие%20природных%20ресурсов%20на%20экономическое%20развитие:%20краткий%20обзор%20теорий%20и%20проблемы%20их%20применения%20к%20советскому%20случаю.

4 V. P. Karpov *et al., Zapadno-Sibirskii neftegazovyi proekt: Ot zamysla k realizatsii* (Tiumen': TiumGNGU, 2011), 248.

corrected for inflation.[5] However, the cost of increasing the output per ton of oil almost doubled. Discovered in 1961, the Siberian oil followed the law of diminishing returns—an old, melancholic discovery of classical economics that was never recognized by Marxism. In 1980, nobody knew that that year would mark the peak on both curves—of the Soviet oil production and of its price.

The Three Bakus

Born in Adygea in the Soviet Caucasus and trained in Chechnya, Mal'tsev had made his career in Tatarstan. He was an expert in "marginal flooding" (*zakonturnoe zavodnenie*), a technique that enhanced oil recovery by pumping water into the drills that encircled the oil field.[6] A characteristic method of the Soviet oil industry, marginal flooding turned huge areas of arable land into swamp, leaving large amounts of oil inaccessible forever. Flooding one major field after another, Mal'tsev was moving further east, to the Urals. In 1961, he had just received a new appointment to Perm' when he got the astonishing news: Farman Sal'manov, a geologist from Azerbaijan, had discovered oil in the empty, endless marches of the Surgut area in Western Siberia. It was a big fountain—but a small premonition of things to come. Over the next two decades, the Siberian wells would turn the Soviet Union into the largest oil producer in the world. Mal'tsev, who moved to the Ministry for Oil Industry in 1972, oversaw this enormous growth.[7]

There could have been no starker contrast than between the dry, rocky landscape of the Caucasus and the flat Siberian marches. But Mal'tsev, Sal'manov, and other people from the Caucasus were the best and earliest oilmen in the Urals and Siberia; they were also

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5 Mariia Slavkina, "Chetyre lika sovetskogo neftianogo eksporta: Osnovnye tendentsii razvitiya v 1922-1990-e gody," *Vestnik Cheliabinskogo gosudarstvennogo Universiteta. Istoriia* 7, no. 261 (2012): 53–64.

6 A primitive method of "secondary recovery," this technology is known in the West as waterflooding. Practiced in the US since 1940, it leads to pollution and swamping, especially if used for large oil fields; see https://petrowiki.org/Waterflooding.

7 From 1972 to 1977 Nikolai Mal'tsev served as the First Deputy Minister for Oil Industry of the USSR, and from 1977 to 1985 as the Minister for Oil Industry.

fit for surviving in the swamps of the all-controlling Soviet bureaucracy. Known for his insubordination—Sal'manov had made his discovery after leading his drilling team many kilometers away from the designated area—Sal'manov made a career that was slower but steadier than Mal'tsev's; he became deputy minister of geology in 1987.

Nikolai Baibakov, the top Soviet oilman, was also from Azerbaijan. From 1965, for two decades, Baibakov was the head of Gosplan, the State Planning Committee. He started his career by organizing the oil supplies from the Caucasus to the Red Army during World War II and controlled the destruction of wells in the Caucasus during the Soviet retreat. He favored strict, even Stalinist methods. In the early 1960s, Khrushchev removed him from the Russian republican branch of Gosplan, but right after Khrushchev's fall, Baibakov received the crucial position of the head of Gosplan for the USSR.[8] Under Baibakov, Gosplan defined the levels of oil production for every region, and the state plan became the law of the land. Coordinating all other ministries, Gosplan was responsible for directing huge resources to arbitrary causes, monitoring realization of these plans, and revising them if needed. It was largely at this level of leadership that the realities on the ground clashed with the needs of the system. Inspired by Siberian discoveries, Baibakov turned oil into an omnipotent instrument of the government: oil moved, heated, and finally, fed the country. Formulated from the very top of the Party power, the Food Supply Program *(Prodovol'stvennaia programma)* expanded this approach to the limit.[9] Issued by the Plenum of the CPSU Central Committee in May 1982, it also became the law of the land; but its

8 Nikolai Baibakov was Soviet Minister for Oil Industry (1948–55), head of Gosplan for the USSR (1955–57), head of Gosplan for the RSFSR (1963–65), and head of Gosplan for the USSR (1965–85). On Baibakov, see Maria Slavkina, *Nikolai Baibakov* (Moscow: Molodaia Gvardiia, 2010).

9 On the food shortages in the USSR, see John F. Burns, "Soviet Food Shortages: Grumbling and Excuses," *New York Times*, 15 January 1982. On the Food Supply Program, see David Gale Johnson and Karen McConnell Brooks, *Prospects for Soviet Agriculture in the 1980s* (Indianapolis, IN: Indiana University Press, 1983); and Nikolas Gvosdev, *The Strange Death of Soviet Communism: A Postscript* (New York: Transaction Publishers, 2008), 50–51.

implementation fully depended on the Siberian oilmen. When the Soviet oil producers exceeded the planned numbers, as they did in the 1970s, Gosplan eagerly corrected its benchmarks upwards. But when the reports failed to match the plan, as it happened with oil production in the 1980s, correcting the plan downwards felt like a catastrophe. Like all major economies of the Cold War era, the Soviet economy needed growth, but in this case the growth depended solely on oil. Both Baibakov and Mal'tsev lost their jobs in 1985.

The late Soviet empire effectively absorbed national and local elites—high-flyers such as Baibakov, Mal'tsev, or Sal'manov—into various levels of its multi-ethnic bureaucracy. When Mal'tsev operated in the Urals or Sal'manov in Siberia, they were there as Soviet officials, and they continued their careers in Moscow also as Soviet officials; the fact they were both born, raised, and trained in the ethnic enclaves of the Caucasus did not slow their careers. It is surprising indeed how many of these oilmen were also *natsmen*, ethnic cadres.[10] Many of them started their careers in Baku or Grozny in the 1930s, served in the Red Army during World War II, shifted to the Volga oil fields, which they named the "Second Baku," in the 1950s, and then developed the West-Siberian fields—the "Third Baku," in the 1970s. Though their careers reached their highest points under Brezhnev, they all acquired their formative experience under Stalin; both Stalin and his notorious helmsman, Lavrentii Beria, also started their political careers in the oilfields of Baku.

[10] In the period of the West-Siberian oil boom, the Soviet Minister for Construction for the Oil and Gas Industry, Boris Shcherbina, was a Ukrainian from Kharkiv; the Minister for Gas Industry, Sabit Orudzhev, was an Azeri from Baku; the Minister for Chemical Industry, Leonid Kostandov, was an Armenian from Turkmenistan; the Minister for Oil Industry, Nikolai Mal'tsev, was a Russian from Adygea; and the most powerful of all, the Chairman of the State Committee for Planning, Nikolai Baibakov, was a Russian from Azerbaijan. This situation does not fit Yuri Slezkine's influential model of the Soviet Union as a "communal apartment": the power of the central administration and its ability to absorb talents and resources were incomparably higher than those of the communal "elder." For the "communal apartment" model, see Yuri Slezkine, "The USSR as a Communal Apartment, or How a Socialist State Promoted Ethnic Particularism," *Slavic Review* 53, no. 2 (July 1994): 414–52.

In fact, the three metaphorical Bakus were even more different than the landscapes in which they were grounded. While the wells and refineries in Baku and Grozny were founded by private entrepreneurs, the development of oil fields in the "Second Baku"—in Tatarstan, Bashkiria, and Perm'—were usually started by Gulag labor camps, which were abundant in these areas.[11] The connection to forced labor was less common in the oil fields of Western Siberia; these were developed well after the Khrushchev revelations of 1956, which denounced Stalin and condemned Beria. Talking about the "Third Baku" and still holding to the Caucasian oil as their intuitive model, the Soviet oilmen glossed over the huge changes that had taken place in their business over these decades. But in the 1960s, oil fountains were changing Siberia as much as they had changed the Caucasus fifty years earlier. Georgii Arnopol'skii recalled his experiences as one of the young specialists who came to Siberia from Tatarstan in 1964: "We felt the scale of Nizhnevartovsk already then: if in Tatarstan we were preparing for exploiting the wells for years, here we were given only two months to build oil pipelines, reservoirs, oil loading piers and other structures."[12] As long as the fountains raised oil to the skies as they did in Baku, the drillers did not need pumps and much other equipment. The fountains soon vanished, and oil had to be pumped and oil basins flooded, as the oilmen had done it back in Tatarstan. Distances were enormous, populations scarce, and territories difficult for development. But the Gulag that helped the people from the First Baku to develop the Second was absent here.

Resolution No. 241

In March 1980, the Central Committee of the Communist Party and Soviet Council of Ministers issued their joint Resolution No. 241. Criticizing the Soviet ministries for industrial construction for "unsatisfactory performance" in Siberia, the high authorities

[11] On the oil development in the Urals, see Douglas Rogers, *The Depths of Russia: Oil, Power, and Culture after Socialism* (Ithaca, NY: Cornell University Press, 2015).

[12] Evelina Osipian, *Geroi Samotlora. 1965–2015* (Nizhnevartovsk, 2015), 10.

"approved the patriotic initiatives" of eight republics and two individual cities (Moscow and Leningrad) to "help" constructing cities, laying roads, and developing social infrastructure in Western Siberia. This resolution said nothing about the participation of the republics in the drilling, laying of pipes, and other specifically oil and gas tasks. Signed by Vladimir Dolgikh, a metal engineer from Siberia who was a Secretary of the Central Committee, this detailed document specified selected parts of the Soviet Union that would send their workers thousands of kilometers away from their homes.[13]

We know about the context of this decision from the memoirs of Vasyl' Vozniak, an engineer from Ukraine who made his career from a post in the Tiumen' municipal government to the apparatus of the Central Committee of the Communist Party of the Soviet Union. According to Vozniak, development of Siberian oil revealed a structural problem: built by the Moscow ministries, the new Siberian towns had failed to develop their "social sphere"—schools, hospitals, roads, etc. Since all Soviet republics and regions received the food and other benefits that were traded for the Siberian oil and gas, Vozniak argued, they should also contribute to constructing the new Siberian towns and infrastructure. Shift labor would relieve the immense burden of social infrastructure: temporary workers would not require the key elements of urban development—family housing, schools, hospitals, etc.—that settled labor required. Using these arguments, Vozniak supported Mal'tsev's idea that several republics and regions of the Union, such as Ukraine, Tatarstan, and Leningrad, should send their teams to Western Siberia.[14]

The decision was extraordinary. Inviting organized labor from Soviet republics to work in Siberia violated a tradition that was foundational for the Soviet state. The system separated the powers of the "Soviet Union," with its enormous bureaucracy and resources,

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13 Postanovlenie TsK KPSS i Soveta Ministrov SSSR ot 20.03.1980 N 241 "O neotlozhnykh merakh po usileniiu stroitel'stva v raione Zapadno-Sibirskogo neftegazovogo kompleksa."

14 V. Ia. Vozniak, *Ot Tiumeni do Chernobylia* (Moskva-Berlin: Direct-Media, 2016), 102; see also Sh. S. Dongarian, *Na stroikakh neftianogo veka* (Moskva: Neftianoe khoziaistvo, 2008), 179.

from the modest bureaucracies and resources of the "Soviet republics," the semi-autonomous entities such as the Ukrainian Soviet Socialist Republic (SSR), the Azerbaijan SSR, or the Russian Soviet Federative Socialist Republic (RSFSR). Republics had no legal right or physical opportunity to interfere in one another's affairs. To complicate things further, some Soviet republics also included "autonomous republics" (ASSRs), such as the Chechen-Ingush ASSR or the Tatar ASSR. Part of the RSFSR, these two autonomous republics were resourceful in oil and construction business, and they had their own ministries.

Under this system, the constituent republics shared their sovereignty with Moscow, but enjoyed protection of that sovereignty when it came to relations with other Soviet republics. The whole arrangement was based on territorial sovereignty, vertical discipline, and horizontal non-interference. All conflicts of any kind were handled and resolved exclusively by Moscow. This Soviet principle of equal sovereignty of all republics, including Russia, was essentially imperial: Moscow was like Rome, Vienna, or Washington DC—a purposefully non-national, or rather de-nationalized, center of ethnic domains. Based on vertical subordination to the center and horizontal non-interference in the neighbors' affairs, this imperial construction explains the absence of territorial conflicts among the republics of the Soviet Union. It also helps to explain the explosion of such conflicts among the neighboring republics—the Russian Federation and others—after the fall of the Soviet super-state.

Violating this arrangement, Mal'tsev's initiative did not fit into the Brezhnev-era formula of "collective leadership" (or in the current parlance, corporate rule), and neither did it match the metaphor of the communal apartment:[15] from Moscow, minister Mal'tsev directly contacted Ukrainian or Tatar companies, sending them to Siberia by ministerial order and ignoring the relevant republican and autonomous republican authorities. In the Brezhnev

[15] Slezkine, "USSR as Communal Apartment." See also Ronald Grigor Suny and Terry Martin (eds.), *A State of Nations: Empire and Nation-Making in the Age of Lenin and Stalin* (New York: Oxford University Press, 2002).

era, the Soviet government aimed at integrating all Soviet republics in one Union and all Soviet peoples in one nation. Based in Moscow, the Soviet ministries such as Mal'tsev's were strictly separated from the government of the Russian Federation, which also functioned in Moscow. Ideologically and to some extent legally, Russian Federation had no priority over Ukraine; it was the Soviet bureaucracy that had priority over Russian and Ukrainian bureaucracies. If the Union minister Mal'tsev could direct the works in Tiumen' bypassing the government of the RSFSR, there was no reason why he could not bypass the Ukrainian government in directing the work in Ivano-Frankivs'k. The way to visualize this arrangement is to imagine the Soviet institutions in Moscow out of Russian lands, in a third dimension of the map. The "republics," including the Russian republic, were equal, but the "center," Moscow, was above them all. There are few historical analogies for the awkward complexity of the Soviet management, which split the Moscow administration into two unequal bodies—one for the "republic," and another for the "union." An imperial model describes this two-tier pattern better than others.[16]

From Western Ukraine to Western Siberia

Historically, Ukraine was the only oil-and-gas producing part of the USSR that did not fit into the strategic idea of three oil booms moving eastbound—in a very Soviet version of *Drang nach Osten*—from the first to second to third Baku. Uniquely, development of oil fields in Galicia significantly predated their development in Baku. Before World War I, the Galician oil fields belonged to the Austro-Hungarian Empire. The fields near Ivano-Frankivs'k (then

[16] In Vienna, the capital of the Austro-Hungarian Empire, there were also two governments: the imperial government of Austria-Hungary and the government of Cisleithania, which was another name for Austria proper. In Moscow, many structures were doubled, with parallel institutions for the Soviet Union and the RSFSR. But there were certain bodies that were conspicuously absent at the RSFSR level. One of them was, famously, the Academy of Sciences; another was the Ministry for Oil Industry (by contrast, the Ukrainian SSR, for example, had both).

Stanislau) were drilled continuously from the mid-19th century; in 1866, the city of Drohobych saw the construction of the first refinery. In 1880, when Emperor Francis Joseph visited Galicia, officials called it a land where "salt and oil flow."[17] The Galician oil and petrol were the main source of fuel for the Central Powers during World War I. After the war, the region went to Poland, and oil production boomed. Interestingly, sometimes Galicia was compared to Europe's own Siberia or an Austrian Siberia, which was still waiting for civilization.[18] In the administrative and research environment that was dominated by the Caucasian oilmen, the oil and gas production in Ukraine constituted a parallel reality. But it so happened that one hundred years after the Austro-Hungarian emperor visited oil wells in the Carpathians, a later generation of Galician oilmen would be massively involved in civilizing Siberia.

Second after Russia in its economy and population, Ukraine was a major center of the Soviet oil. Ukrainian oil resources were significant: on territory that was less than 0.5 per cent of the globe, Ukraine boasted 5 per cent of the world's prospected oil.[19] However, the quality of this oil was poor, and the wells were prone to rapid exhaustion. It was in the sphere of natural gas, its production and transportation, that Ukraine had unique expertise. During World War II, the region was heavily bombed because of oil. Transferred to the Soviet Union under the terms of the February 1945 Yalta agreement, West-Ukrainian lands became part of the Soviet Ukrainian Republic; war, the Holocaust, population transfers, and the terror of the late 1940s, bled the region. Nikita Khrushchev, first secretary of the Ukrainian Communist Party from 1938, personally oversaw the transfer of Galicia from Poland in September 1939, Bukovyna from Romania in June 1940, and Pidkarpats'ka Rus' from

17 Alison Fleig Frank, *Oil Empire: Visions of Prosperity in Austrian Galicia*, Harvard Historical Studies 149 (Cambridge, MA: Harvard University Press, 2007), 24.

18 *Ibid.*, 12, 75.

19 Svetlana Plachkova, *Energetika. Istoriia, nastoiashchee i budushchee* (2012–2013), Book 1, Section 8.6, Oil and Gas in Ukraine: http://energetika.in.ua/ru/books/book-1/part-2/section-8/8-6.

Czechoslovakia in 1946. These territories were Sovietized and local industries nationalized.[20] Oil was an asset of the region.

In 1945, the Soviet authorities opened a college in Drohobych for teaching oil and gas technology. Its first students graduated in 1948; in total, the college prepared 20,000 drill-masters and other specialists, who worked in Soviet Ukraine and later in Siberia. The L'viv Polytechnic Institute and the Ivano-Frankivs'k Institute for Oil and Gas trained geologists, geophysicists, engineers, and other professionals. The institutes were located close to oil and gas wells, so that graduates combined theoretical knowledge with practical skills.

Then, something unexpected, though not unprecedented, happened: the oil in the Carpathians began to run out (Soviet oilmen had already seen this in the Caucasus). In 1976–82 the rate of decline of the Ukrainian oil output was about 12 per cent a year. Many drills were shut down, and the pipes lay empty. New geophysical methods helped Soviet geologists to find oil fields in East Ukraine, but they remained largely untouched.[21] Gas output was more stable, but also showed a decline in this period. Already in 1952, the Soviet Ministry of Geology relocated the Ukrainian and Belarusian geophysicists to Western Siberia. In 1959–64 the Druzhba (Friendship) pipeline connected the oilfields in Tatarstan with Soviet satellites in Central Europe; indispensable for the survival of the "socialist bloc," this pipeline—then, the longest in the world—crossed the whole territory of Ukraine. In 1966, the Dashava-Moscow gas pipeline was reversed: built for pumping natural gas from Western Ukraine to Moscow, henceforth it passed the gas from the fields of Tatarstan (and later from Western Siberia)

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20 On Bukovyna, see Svitlana Frunchak, "The Making of Soviet Chernivtsi: National 'Reunification,' World War II, and the Fate of Jewish Czernowitz in Postwar Ukraine" (PhD Thesis, University of Toronto, 2014), 120. On Galicia: William Jay Risch, *The Ukrainian West: Culture and the Fate of Empire in Soviet Lviv*, Harvard Historical Studies 173 (Cambridge, MA: Harvard University Press, 2011); and Tarik Cyril Amar, *The Paradox of Ukrainian Lviv: A Borderland City between Stalinists, Nazis, and Nationalists* (Ithaca, NY: Cornell University Press, 2015). On Pidkarpats'ka Rus': Jan Rychlík and Magdaléna Rychlíková, *Podkarpatská Rus v Dějinách Československa 1918–1946* (Praha: Vyšehrad, 2016).

21 Plachkova, *Energetika*, Book 1, Section 8.6.

to the Carpathians, and then to Central and Western Europe. In Poltava in 1971, hundreds of oilmen left their jobs because of low pay, poor work conditions, and the absence of housing.[22] Annually, every third would quit his or her job.[23] These workers formed a potential workforce for the extensive development of Siberia in the early 1980s.

Human Capital

After Sal'manov got his oil fountain near Surgut in 1961, it took some time for the Soviet planners to realize what a treasure they owned in Western Siberia. Promoting the Siberian oil, Mal'tsev became First Deputy Minister for Oil Industry in 1972. The same year, the Siberian oil became a key subject of the Soviet-American negotiations. Anatolii Cherniaev was a trained historian and Brezhnev's personal assistant who took part in preparing Richard Nixon's visit to Moscow that year. According to Cherniaev's diary, Nixon came with a big plan. Interested in the Siberian oil and even more in gas, the Americans proposed building two gas pipelines, one in Western Siberia from Tiumen' to Murmansk, and another in East Siberia from Viliui to Magadan. The Americans also wished to build two gas-liquefying plants and two ports for ocean tankers. Reporting this proposal to the Politburo, Baibakov wanted approval. Mykola Podgornyi, an engineer who was born near Poltava and trained in Kyiv—he was the nominal leader of the USSR (Head of the Supreme Soviet, 1965–77)—mocked the project: "It sounds like we are going to sell off the whole Siberia to the Americans. Why can't we do all

[22] Tsentral'nyi Derzhavnyi Arkhiv Orhaniv Vlady ta Upravlinnia Ukrainy (TsDAVO), fond P-4626 (a set of documents prepared by the State Committee of the Ukrainian SSR for Labor and Social Affairs (Derzhavnyi Komitet URSR z Pratsi ta Sotsial'nykh Pytan'), opys 3 (a set of documents produced by the Main Department of Organized Recruitment and Resettlement of the Council of Ministers of UkrSSR), sprava 647 (correspondence between the State Labor Committee and the Central Committee of the Ukrainian Communist Party on the distribution of labor resources), arkush 145, 1973.

[23] TsDAVO (1973), fond P-4626, opys 3, sprava 647, arkush 163.

this work ourselves?" [24] Baibakov's plan was abandoned; for ideological reasons, the Soviet ministries did not allow non-Soviet citizens to take part in the oil and gas business.

In 1977, Mal'tsev became the Minister for Oil Industry. Soviet oil extraction was shifting from the highly populated Caucasus, Volga, and Ural regions to the swamps of Western Siberia. This massive change meant huge expenditures on transportation.[25] The Soviet Union did not have gas-liquefying plants or ocean tankers. First, the Soviet oilmen brought the precious oil to Europe by the Trans-Siberian railway. After much delay, the major gas pipeline, Urengoi-Uzhhorod, was built in 1983. Fighting the American sanctions that followed the introduction of martial law in Poland (1981) but with the benefit of German loans, the planners of this pipeline resolved enormous difficulties. One of the leading Siberian oilmen, Ya. M. Kagan, compared the development of the Siberian oil and gas fields to the Soviet nuclear project: both were crucial for the security of the state, he said, and both posed enormously complex technical challenges. [26] Writing in the 1980s, American experts reported that Soviets would meet difficulties if they wished to extract natural resources in Siberia.**27** There was a great deal of oil in Siberia, and there was almost everything in the Soviet Union necessary for developing it on a grand scale—political will, technological knowledge, and available capital. But one factor was in deficit: labor. Though historians and critics of the oil industry often believe that it is not labor-intensive,[28] the initial development of oil fields in the Siberian swamps required huge amounts of

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24 Anatolii Cherniaev, *Dnevnik dvukh epokh. 1972–1991 gody* (Moscow: ROSSPEN, 2010, *Chast' 1.*

25 Albina Tretyakova and Meredith M. Heinemeier, *Cost Estimates for the Soviet Oil Industry, 1970 to 1990* (Center for International Research, Bureau of the Census, US Department of Commerce, 1986), 2.

26 Karpov *et al., Zapadno-Sibirskii neftegazovyi proekt,* 157.

27 Jeronim Perović, *Cold War Energy: A Transnational History of Soviet Oil and Gas* (New York: Palgrave, 2017), 22.

28 E.g. Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2011); and Michael L. Ross, *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations* (Princeton, NJ: Princeton University Press, 2012).

qualified labor. In this respect, the story of Siberian oil fields was very different from the better-known cases of drilling in the Middle Eastern deserts or in the North Sea.

First, erecting derricks, building roads, or laying pipes in the swamps was more labor-intensive than doing this in the desert or in the sea. For every derrick or cluster of derricks, the workers had to build a massive sand platform that rested on the firm bottom of the swamp. Since there was no sand in the vicinity, it had to be delivered by barges to the closest river pier, and then lifted by helicopters and dropped into the swamp. Later, helicopters brought metal parts to the new platform. Second, Siberian distances are longer than distances on many other lands or seas. Historically, the cost and effort of terrestrial transportation of building materials were always higher than moving them by sea. Finally, in this strategic issue the Soviet authorities relied exclusively on their own people, technologies, and equipment. It was a huge contrast to the practices of transnational oil corporations such as the Seven Sisters (Shell, BP, Chevron, etc.) that operated in the Middle East and all over the world: wherever they worked, they brought on site hundreds of foreigners who built the platforms, manned the derricks, and provided security services.

This is why the Soviet authorities struggled with a labor shortage that was unusual for Big Oil. The more natural resources they found, the more they confronted the lack of human resources. Instead of buying expertise and labor abroad, they had to cultivate it at home. But their home was large, and so they managed to find the necessary people many thousands of kilometers away from the prospective oil and gas wells. In many respects—professionally, culturally, even ethnically—these people were foreign to Siberia; but they were Soviet citizens, which made them politically acceptable.

The swamps of Western Siberia were notoriously underpopulated, and local hunters, fishermen, and reindeer herders were ill-suited to oil drilling. The only industry that existed there was timber. But the region was also rich in water energy. In the 1950s, Gosplan decided to construct on the river Ob' the largest hydroelectric plant in the world. If realized, this plan would have led to the permanent flooding of the major part of the Tiumen' region;

the Surgut and other wells would likely never have been drilled.**29** The debates about plans for the monstrous dam were in full swing when Farman Sal'manov discovered big oil in this area. Always thinking about oil above everything else, Gosplan canceled the dam project. As they were informed of discovery after discovery of oil in Siberia, the leaders of Gosplan constantly revised the estimates of the future oil production, increasing the target four- or five-fold annually in the early 1960s.[30] Their plans also presumed that the population of the region would reach three million by the end of the 1980s, which was a huge overshoot.[31] Still, over the course of ten years, 1973–83, the Soviet Union earned 90 billion dollars from its oil and gas trade, and the biggest part of the revenue came from Siberia.[32] It was a huge success.

This bullish period saw fierce competition between two powerful leaders of the Soviet Siberia—Boris Shcherbina, the First Secretary of the Tiumen' Regional Party Committee (1961–73), and Egor Ligachev, his counterpart from Tomsk (1965–83). A Ukrainian from Donetsk who was trained in Kharkiv, Shcherbina presided over the fabulous expansion of the region's economy. In a symbolic coincidence, his appointment to Tiumen' followed immediately after the first oil was found in the region. It was Shcherbina who lobbied for canceling the hydroelectric project that would have flooded the Tiumen' region.[33] His rival in the neighboring Tomsk, Ligachev was born in Siberia and trained in Moscow. He was very efficient in lobbying for budget subsidies to Tomsk, but the regional economy barely grew: there was not much oil and gas there. Pursuing a career in the Party higher ranks, Ligachev became a

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29 Karpov *et al., Zapadno-Sibirskii neftegazovyi proekt,* 124.

30 *Ibid.,* 126.

31 *Ibid.,* 137.

32 Mariia Slavkina, "Grani nesostoiavsheisia reformy," *Biudzhet* 1 (2004), http://bujet.ru/article/18260.php.

33 An oilman through and through, Shcherbina became Soviet Minister for Oil and Gas Construction Industry (1973–84) and Deputy Chairman of the Soviet Council of Ministers (1974–89)—a position from which he oversaw all aspects of the Soviet oil and gas. He died from the massive radiation that he received while he was leading the inter-ministerial effort to "liquidate the consequences of the Chernobyl' catastrophe."

secretary of the CPSU Central Committee and member of the Politburo. Never an oilman, he became one of the leaders of Perestroika, which he understood as the technocratic modernization and preservation of the Union. In Shcherbina, a Ukrainian led the Siberian oilmen to their major success; in Ligachev, a Siberian led the Soviet system to its terminal failure.

Shift Workers

While the center of gravity was moving east across the Soviet Union, a similar process, though on a smaller scale, was taking place within Ukraine: the oil and gas development shifted from the West to the East of the country. The Carpathian fields were depleting, but the development of the huge Shebelinsky gas deposit near Kharkiv started in 1956.[34] A decade later, it became the main source of republican revenue. Here the Ukrainian gas specialists learned complicated techniques of drilling, which they later used in Siberia: they mined deep wells and drilled diagonal shafts.[35] In 1975, the Ukrainian gas industry reached its climax and produced 68.7 billion cubic meters of gas, which was more than in any European country; it came mostly from the eastern parts of the republic. The Ukrainian oil- and gasmen organized work in weekly or monthly shifts, and the use of shift-work brigades *(vakhtery)* became a typical method for drilling, laying pipelines, and servicing derricks. Helping to preserve old homes and families in Western Ukraine while working in the new East-Ukrainian oil and gas fields, this method provided flexibility and secured professional survival. Routinizing the intra-Ukrainian migrations, it paved the way to spectacular (though hitherto under-studied) trips to Siberia in the 1980s.

In Western Ukraine, seasonal labor migration (*otkhodnichestvo*) was a deeply ingrained tradition; through the nineteenth century, Galician villages supplied the industrialized regions of Donbas, Eastern Poland, and Central Russia with seasonal

34 Ivan Diak, Zynovii Osinchuk, and Bohdan Savkiv, *Hazova haluz' Ukrainy. Stanovlennia, Dosiahnennia, Osobystos'ti* (Kyiv: Svit Uspikhu, 2009), 200.

35 *Ibid.,* 76, 201.

labor. Cheap, qualified, and flexible, this labor was organized in teams (*arteli*) structured by kinship and common origin. It was in high demand in all businesses that were neither traditionally agricultural nor specialized as in a capitalist factory—e.g. in construction work, transportation, mining, etc.[36]

Long practice of seasonal migration transformed East European rural societies, providing their families with high incomes that were more characteristic for industrial areas. It also allowed Ukrainian communities to reap the benefits of the labor market without being destroyed by Karl Polanyi's "great transformation"—early capitalist development in which the market forces typically destroyed peasant households.[37] Interestingly, seasonal migration softened class distances but increased gender ones. Since the seasonal migrants were predominantly male, labor migration added another factor to female dependency. As in other cases of gender-specific labor migration—of fishermen, sailors, lumberjacks etc.—men's predictable absences, women's exclusive responsibility for child-care, and the general sense of growth and enrichment created a particular work-and-family ethic, which emphasized male industriousness and female fidelity.

The local paradox was that while the production of energy in Ukraine was decreasing through the post-war period, the production of relevant expertise and personnel was increasing. Despite the depletion of oil and gas, the training institutions in L'viv and Ivano-Frankivs'k continued working and growing. On top of its undergraduate classes, the Ivano-Frankivs'k Institute for Oil and Gas created a graduate program; experimenting with old drills or devising new equipment, oil engineers wrote and defended dozens

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36 On the history of seasonal labor migrations, see: M. A. Kolomeitseva. "Remeslennaia deiatel'nost' krest'ianstva i nezemledel'cheskii otkhod v Oblasti voiska Donskogo" (2016), available at: https://cyberleninka.ru/article/n/remeslennaya-deyatelnost-krestyanstva-i-nezemledelcheskiy-othod-v-oblasti-voyska-donskogo-v-xix-nachale-hh-veka; V. G. Myt'ko. "Nekotorye voprosy otkhodnichestva belorusov v poslereformennyi period," available at: https://rep.bntu.by/bitstream/handle/data/10915/C.%20172-176.pdf?sequence=1&isAllowed=y; and Iurii Pliusnin *et al., Otkhodniki* (Moskva: Novyi khrongraf, 2013).

37 Karl Polanyi, *Great Transformation* (New York: Beacon, 1957).

of PhD dissertations through the 1970s and '80s. In part, the needs of the growing pipelines, which passed through Western Ukraine, justified this development. However, many graduate dissertations were still about drilling, and their material was predominantly local. Preserving training facilities and building the expertise in Ivano-Frankivsk despite the decline of production proved the wisdom or luck of the Soviet planners. The region of the USSR that benefited from this accumulation of human capital in Western Ukraine was very far away, in Western Siberia.

In the 1960s and '70s, several administrative reforms changed the Ukrainian oil and gas industry.[38] First, a gas drilling department, UkrGazProm, was organized in Poltava, while oil extraction was given to the state company, Ukrnafta.[39] Similar consolidation took place within the oil ministry. The Ivano-Frankivsk Drilling Department (*Ivano-Frankivs'k Upravlinnia Burovykh Robit*, IFUBR) was established in 1970. It employed six drilling brigades, which altogether had more than 100 workers.[40] In seven years IFUBR doubled its number of brigades and relocated some of its workforce to East Ukraine. Its maternal organization, state company Ukrnafta agreed to establish the republican work shifts.[41] Starting from 1976, the head of IFUBR was Myron Ivaniv, an enthusiast of shift work.[42] The organization took part in oil extraction in the Sumy region and elsewhere in East Ukraine. In shifts, the oilmen went to the East for two weeks, and then stayed at home for two weeks. Thus, in the 1970s the Carpathian drill workers used regional shifts or expeditions *(vakhtovo-ekspedetsiinyi metod)* within Ukraine.

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38 Diak, Osinchuk, and Savkiv, *Hazova haluz' Ukrainy*, 199.

39 Maksym Biliavskyi, "Istoriia odnoho vidkryttia. Gazovii promyslovosti Ukrainy—90 rokiv," *Istorychna pravda*, 25 September 2014, http://www.istpravda.com.ua/articles/2014/09/25/144855/; and "Kraina hlybokoho burinnia. Iak ukraintsi dobuvaly gaz dlia SRSR," *Istorychna pravda*, 16 February 2012, http://www.istpravda.com.ua/articles/2012/02/16/73445/.

40 Myron Ivaniv, *Krylataia vakhta* (Uzhhorod: Karpaty, 1990), 7–8.

41 Mykhailo Borys, *Vid hlybyn Karpat do nadr Sybiru* (Kyiv: Radianska Ukraina, 1991), 10.

42 Myron Ivanovych Ivaniv (1938–2003) worked as the head of IFUBR till 2001, thus being in the leading position for 28 years—18 years in the USSR and 10 years in independent Ukraine.

In 1978, these two companies, UkrGazProm for gas and IFUBR for oil, started preliminary works in Siberia. Miron Ivaniv discussed the work in Siberia with the Moscow authorities in February 1978. Ivaniv's associate described these talks as an "invitation to greatness."[43] Already in May, the Soviet Ministry for the Oil Industry ordered IFUBR to send its people to Siberia. In July, eight Ukrainian oil-drillers flew to Nizhnevartovsk to settle the base. This work paved the way to Mal'tsev's initiative of 1980, which ended with several republics and regions sending their oilmen and builders to Siberia.

From the start, the Ukrainians understood their Siberian mission in mixed terms, combining Soviet Romanticism with financial interest. In the late 1980s, after ten years of work in Siberia, Myron Ivaniv, the head of IFUBR, wrote:

> For the Soviet people the Tiumen' region became a symbol of heroic labor... Amidst swamplands, in remote and deserted tundra forests, these men developed rich oil and gas fields... It became possible due to the work of the entire multinational Soviet society.[44]

Professionals from Ukraine drilled wells and laid pipes in Nizhnevartovsk. They built cities such as Noiabrsk or Muravlenkovo. The teams from Kyiv constructed concrete roads in Siberia. Their bargaining power capitalized on the labor shortage in Siberia, on the abundance of available money, on the relaxed rules of accounting, and on the unique competence of Ukrainian teams. Due to financial incentives and technical supplies, these teams proved to be more efficient in Siberia that they had been at home. Under Ivaniv's supervision, IFUBR in the mid-1980s achieved more than one million meters of earth penetration per year and installed a derrick every two weeks. In native Ukraine, IFUBR could install 10-15 working oil wells per year; in Siberia, this company produced the same number per month.[45] In total, between 1978 and 1998, IFUBR employed twenty-one drilling brigades, ten construction brigades,

43 Ivaniv, *Krylataia vakhta*, 11.
44 *Ibid.,* 3.
45 Ivaniv, *Krylataia vakhta*, 4.

and ten service brigades in Siberia. It also had several production bases, a transport enterprise with thousands of vehicles, and an engineering unit.[46]

The Ukrainian gas drillers moved to Siberia as well.[47] In December 1981, Ukrburgaz started the first drills in the Arctic gas field of Urengoi. Ukrburzaz drilled almost 200,000 meters of earth yearly and IFUBR produced a million meters per year. This was a big share in the total drilling in the Urengoi and Tiumen' regions. Employing ten thousand flying workers, these two Ukrainian companies produced in Western Siberia 3 billion cubic meters of gas and 1.4 million tons of oil a year. But this output was just a collateral of drilling new wells; these wells kept working for years and decades after the Ukrainians left and Russian teams replaced them, extracting much more oil and gas.

Work-shifts between Ukraine and Siberia covered five thousand kilometers, but this method was economically successful. Robert Shevaldin,[48] an official at the Ministry for Oil Industry, stated that flying brigades did 38 per cent of all drilling in the region; about a third of these shifters were Ukrainians.[49] Every shifter saved the local administrations from 20 to 60 thousand rubles.[50] Having built 600 wells in Siberia, which were extracting 30 billion cubic meters of gas a year, Ukrburgaz fully covered the Ukrainian demand for gas: much later, in 2012, Ukraine bought 33 billion cubic meters of gas from Gazprom.[51] The Siberian success was one of the reasons why the Ukrainian companies effectively stopped working in their country in the late 1980s.

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46 Ivan Mykhailovych Fedoruk, personal interview, 15 December 2017.

47 Diak, Osinchuk, and Savkiv, *Hazova haluz' Ukrainy*, 206.

48 See Shevaldin's recollections, "O sozdanii neftegazovogo kompleksa v Zapadnoi Sibiri," at: http://zszem.ru/mir-o-nas-myi-o-mire/myi-o-mire/knigii/neftyanaya-epopeya-zapadnoj-sibiri/shevaldin-robert-grigorevich.html. This text can also be found in M. M. Krol (ed.), *Neftianaia epopeia Zapadnoi Sibiri* (Moscow: Neftianik, 1995).

49 *Ibid.*

50 Dinkova, *Neft' SSSR (1917–1987)* (Moskva: Nedra, 1987), 353.

51 After 2015 Ukrburgaz was relaunched. It is now once again the largest gas extracting company in Ukraine, employing 7500 workers.

State Plans and Everyday Life

Siberian oil and gas fields were officially recognized as "regions of new development" *(raion novogo osvoeniia).* In the USSR such regions had specific methods of organizing economy and labor.[52] There was a range of options when it came to workforce organization.[53] These included tours of duty *(ekspeditsii),* in which work crews stayed on site for one season or more. Another common method was organized shifts *(vakhty),* which were two to three weeks long. Permanent work was available to young graduates sent to Siberia to work and settle *(statsionary).* Each big educational institution in USSR had construction brigades *(stroiotriady);* students taking part in these could earn money over the summer while learning the socialist ethic of collective work. Finally, there were "wild shifters," individual *(bichi)* or organized in teams *(shabashniki).* Temporary or permanent migration of workers from other parts of the USSR was an important source of labor in Siberia. Because Ukrainians and Tatars were omnipresent at production sites and cities of the North Tiumen' region, the locals joked that the Yamalo-Nenetskii Autonomous Okrug should be renamed Tataro-Khokhliatskii.[54]

The farther to the Arctic North, the bigger was the role of the work shifts.[55] The initial hopes of building modern, well-supplied oil towns in the moderate climate of Southern Siberia met with the

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52 D. V. Belorusov, "Effektivnost' kompleksnogo razvitiia khoziaistva v raionakh novogo osvoeniia," *Problemy Severa* 15 (1971): 68; V. G. Lazareva, "Vakhtennye poselki dlia raionov novogo promyshlennogo osvoeniia," *Problemy Severa* 18 (1973): 186–87; Aleksandra Poliakova, *Regiony novogo osvoeniia v usloviiakh modernizatsii* (Tiumen': Ist Konsalting, 2010), 8–10; and Denis Borisov, "Vakhtovyi metod kak osobaia forma organizatsii trudovogo protsessa: Na primere predpriiatii neftegazovoi promyshlennosti" (PhD Thesis, Moskovskii gumanitarnyi universitet, 2004).

53 On the Soviet ways of bringing labor to Siberia, see Tretyakova and Heinemeier, *Cost Estimates for the Soviet Oil Industry*.

54 *Khokhol* is a pejorative term used by Russians for Ukrainians, who also use this word in their jokes.

55 This "shifting" Siberian practice is comparable to "FIFO" (fly-in fly-out) practice in the mining industry in Australia and Canada; see e.g. Keith Storey, "Fly-in/Fly-out and Fly-over: Mining and Regional Development in Western Australia," *Australian Geographer* 32:2 (2001): 133–48.

harsh reality: unlike coal, abundant supplies of which are found close to major cities, oil and gas prefer distant, inhospitable areas—swamps and deserts. Realizing the difficulty, the planners switched to a three-layer system of development of Western Siberia. They acknowledged the importance of the big "anchor cities" but presumed that the existing cities to the South of the oil basin such as Tomsk, Tiumen', and Tobol'sk, would continue to play this role. In fact, Imperial or even Muscovite Russia founded these cities hundreds of years ago as hubs and storage facilities for the fur trade, the ancient Siberian business that defined the crucial features of the region.[56] The second layer was new "base cities": smaller, more numerous, and less comfortable, they would combine increased expenditures per person with dormitories, hospitals, entertainment, and other facilities for temporary labor. Examples were Surgut, Nizhnevartovsk, Noiabrsk, and many others. The third layer would be the shift-work centers near the oil and gas wells. Their facilities would be basic. Workers would come and go without families, education, or social life on the spot. In the future, these towns would be mobile: they could move to another cluster of wells if the local ones were exhausted. Theoretical calculations demonstrated that this three-layer structure would save billions of rubles.[57] In practice, like other Soviet industries, oil extraction was over-centralized; 80 per cent of West-Siberian oil came from five drilling centers.[58] It was a reason for stagnation; growth was mostly occurring in the distant, third-layer clusters.

Again, the Ukrainian shifters played a prominent role in these plans. In 1980 the CPSU Central Committee in Moscow distributed the key roles in developing new Siberian towns among various Soviet republics. Ukraine was entrusted with the development of

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56 Alexander Etkind, *Internal Colonization: Russia's Imperial Experience* (Cambridge: Polity, 2011).

57 A. V. Ikonnikov and V. I. Pavlihenkov, "Gradostroitelstvo 1955—1970," in *Vseobschaia istoriia arkhitektury,* v. 12-1 (Moscow: Stroiizdat, 1975); and A. I. Timoshenko, *Gosudarstvennaia politika formirovaniia i zakrepleniia naseleniia v raionakh novogo promyshlennogo osvoeniia Zapadnoi Sibiri v 1950-1980e* (Novosibirsk: Sibirskoe nauchnoe izdatel'stvo 2009), 66–68.

58 Mariia Slavkina, *Rossiiskaia dobycha* (Moscow: Ves' mir, 2014), 291.

Noiabrsk, a city in the Arctic end of the oil and gas basin. A team of geologists who landed from helicopters onto the ice of the local river, started the drills in 1975. During long winters, tractor sledges and helicopters delivered huge amounts of sand, which had to be dumped into the marshes before any construction could start. Ten years later, the town boasted a railway connection to Surgut, an airport, and a school. Fifty thousand permanent inhabitants were living in dormitories, slums, and a number of five-storied buildings. In Noiabrsk, these facilities were all built and largely settled by the Ukrainians; the local House of Culture, a feature of many Soviet towns, was named "Dnieper."

Determined to boost production, the Ministry for Oil Industry introduced a promising novelty: collective responsibility at the level of the brigade *(brigadnyi podriad).* Transforming the Soviet standards of accounting, this principle allowed rewarding the better-working brigades with higher salaries and punishing the less productive brigades; it also made salaries dependent on expenditures, encouraging the brigades to save materials and time. To some extent, the brigadier became an entrepreneur who controlled the work and calculated the profit. First used in the construction work, the brigade was actively used in the drilling as well. In 1975–80, the number of such brigades rose dramatically in the Tiumen' region, increasing productivity, helping to fulfill the plans and also enriching the brigadiers and workers. The latter was a cause of much concern among the socialist planners; but Minister Mal'tsev supported this development. In 1979, he reported that there were 188 drilling brigades in Western Siberia, though 70 of them were not fulfilling the plan. Obviously, the output did not fully depend on the oilmen; some wells were exhausted, others needed reconstruction. The latter issue was particularly sensitive; given the distances, it was difficult to organize the regular servicing of the drills. The Ministry created specialized "repair brigades" *(remontnye brigady);* they had particular skills, transport, and rare equipment. Since they moved from one well to another, there was no reason to settle them in a place such as Noiabrsk. Realizing these issues, Mal'tsev was determined to bring 50 new reconstruction brigades and additionally, 20 construction brigades *(montazhnye brigady)*

from Ukraine, Azerbaijan, Tatarstan, and Bashkiria. Like drillers, these servicemen would come and go by airplane, inspecting the wells with their own equipment. Using the brigade accounting, they would earn significant money. Brezhnev's USSR had no power to bring massive, qualified labor to Western Siberia. It was necessary, Mal'tsev and his fellow ministers decided, to introduce "the principle of material interest" *(material'naia zainteresovannost')* into the collective work in Siberia. If an average worker in the oil and gas industry earned around 200 rubles a month, in Siberia the average monthly income was 520 a month.[59] There is no doubt that the successful shifters earned more: there were extra bonuses "for the mobile nature of work," for work "in the outer field", and for the over-fulfillment of production plans. Laying pipelines, welders could earn 1000 rubles a month. Vacations were also generous, and many oil and gas workers could enjoy them for free, with their families, at the Black Sea resorts.

Ironically, it was the private interest of the individual worker and the creation of autonomous, competing firms ("brigades") that would fulfill the five-year plan. In fact, this approach had been proposed by Aleksei Kosygin, the long-standing Soviet prime minister (1964–80) from St. Petersburg, and his economic adviser Evsei Liberman, a Jew from Volyn' who worked in Kharkiv. If fully implemented, their reforms would give every Soviet enterprise some level of freedom and accountability. In fact, these reforms were cancelled in the late 1970s. The leading Russian historian of the Soviet oil industry, Mariia Slavkina, believes that the failure of the Kosygin reforms was determined by the success of Siberian oil: having acquired what they believed to be an unlimited source of financial wealth, the Kremlin leaders abandoned the reforms which now seemed unnecessary.[60] The irony of this story, however, was that the Siberian oil needed these reforms as much as any other sector of the economy. Suppressed elsewhere, the Kosygin reforms

59 V. P. Karpov *et al., Tiumenskii industrial'nyi vzryv: Istoriia megaproekta* (Tiumen': TGU, 2011), 215.

60 Slavkina, "Grani nesostoiavsheisia reformy"; and Slavkina, *Rossiiskaia dobycha*.

were implemented in Siberia at the level of fly-in fly-out brigades from Ukraine and other distant republics.

Due to the brigade work, new derricks and pipe networks grew up around new Arctic towns such as Noiabrsk; they all needed constant care and maintenance. According to Shagen Dongarian, an Armenian from Azerbaijan who worked with Mal'tsev as Deputy Minister for the Oil Industry, more than 100,000 people a year were flying to Western Siberia to work in shifts after 1980. The total number of people employed in the Western Siberian oil and gas industry was less than a million in 1985. More than one-tenth of the Siberian oilmen worked in shifts, and they were airlifted from the European parts of the Soviet Union. The Oil Ministry constructed airports in Noiabrsk, Surgut, Raduzhnoe, and many other places in Western Siberia. It also modernized airports in Ivano-Frankivs'k, Ufa, and Kuibyshev, to help its oilmen fly to Siberia and back by direct flights.[61]

In the most dynamic parts of the West-Siberian network, the numbers of the shifters approached the numbers of the settled workers. For example, Nizhnevartovsk, a crucial oil center of the region, had 150 settled "reconstruction brigades" and 100 "flying brigades." Some of these temporary workers moved to the Siberian oil towns permanently; many others earned significant sums of money and returned to Ivano-Frankivs'k, L'viv and Poltava, or to Kazan', Ufa, and Baku. In the spring of 1978, Brezhnev visited Tomsk and some other Siberian cities by train; this happened about one hundred years after Franz Joseph, the Emperor of Austria-Hungary, visited the oil towns of Galicia. In both cases, massive investments followed the pompous leaders. In 1985, the new CPSU General Secretary, Mikhail Gorbachev, directed one of his very first trips to the West-Siberian oil fields. Acknowledging their deep and unresolved problems, his message was very different from Brezhnev's.

For the Moscow leaders, Western Siberia was their blessed land and last promise. But in the mid-1980s it was clear that the drillers and builders of Western Siberia were failing to meet the

61 Dongarian, *Na stroikakh neftianogo veka,* 163.

benchmarks of the state plan, which meant immediate difficulties in financing food supplies for the whole Union. In their last attempt to avert the crisis, the Politburo and Gosplan poured new money into the vast area. In 1985–90, they allocated for Western Siberia 82 billion rubles. It was an enormous sum—about 130 billion dollars on the official rate of exchange, or 20 billion on the more realistic "street rate." Baibakov, who was still the head of Gosplan, calculated that the new disbursement of money would lift the total oil and gas output of the Tiumen' region by 32%. This plan also required bringing to Siberia, permanently or in shifts, more than half a million people on top of the 800000 who had been already employed there.

As we have seen, Ukrainian work-shifts to Siberia started right after Brezhnev's trip in 1978 and intensified after 1980. Oil workers from Ivano-Frankivs'k started their trips to Nizhnevartovsk in July 1978 and gas workers from Kharkiv region arrived in Urengoi in 1981. Ivan Fedoruk from Ivano-Frankivs'k went to Siberia in October 1978 with fourteen other people; earlier, he had worked for IFUBR for eight years in shifts to Eastern Ukraine.[62] An Il-18 plane took the group from Ivano-Frankivs'k to Moscow, and from Moscow to Tiumen', and from there they flew to the city of Nizhnevartovsk. It was not the final stop. The group had to travel to the settlement of Raduzhnyi (Khanty-Mansiisk Autonomous District), which was established in 1973 and became a town only in 1985. When they reached the settlement, they found themselves in the middle of an endless marsh. The town had no infrastructure.[63] Fedoruk was surprised: swamps, myriads of mosquitos, and no roads.[64] But even Nizhnevartovsk did not look like a city. Local officials met their colleagues from Ukraine, signed protocols, and left. Referring to the order signed by Minister Mal'tsev, the Ukrainian workers started building their "base" in Nizhnevartovsk. They received a spot on the marsh; it was hard to build there.

62 Fedoruk, personal interview, 2017.
63 Fedoruk, personal interview, 2017.
64 Ivaniv, *Krylataia vakhta*, 11.

Wells in Nizhnevartovsk were combined into clusters *(kusty)*.[65] IFUBR received Well No. 6 at the North Variegan deposit. The Ukrainians expected to build a derrick in one or two months, and their drillers would come later. The most complicated task was to establish normal living and working conditions. Sometimes, people had to walk three kilometers to their place of work, exposed to temperatures of minus 40 degrees Celsius. Most of the equipment was brought from Ukraine to Nizhnevartovsk by train, and then by helicopter to the drilling site. Later, in the 1980s, heavy cargo planes would bring everything that was needed by Ukrainian personnel in Siberia. Every Ukrainian account of work on Siberian oil and gas fields is full of descriptions of harsh conditions there.[66] Workers slept in wooden houses, which were of poor quality; they hanged glass jars under the ceiling to collect dripping water.[67] They had to travel to their workplace by foot in extreme frost, they stood in long lines to obtain food, could not wash themselves, and had no social life. Bad conditions and permanent frost, work for 12 hours without rest, separation from their families for two and a half weeks per month made many people quit the job. Some of them suffered mental collapse as a result.[68] But the harsh conditions apparently did not destroy the work ethic, and interdependence created strong friendship ties. If the Ukrainians needed equipment or assistance, they could rely on their Russian colleagues, who were friendly and helpful.[69]

In their construction work, the Carpathian experience with timber helped a lot; the oilmen knew how to make walls and roofs using saws and axes.[70] Soon they constructed their own sawmill and exchanged wooden materials for other necessary parts, which had not been provided. Starting their new bases in Siberia, the Ukrainian

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65 A cluster is based on an artificially created sand platform amidst swamps. On this platform, usually, oil workers drill several diagonal bores.

66 Zynovii Osinchuk, personal interview, 5 December 2017; and Roman Iaremiichuk, personal interview, 13 December 2017.

67 Fedoruk, personal interview, 2017.

68 *Ibid.*

69 Ivaniv, *Krylataia vakhta*, 16–17.

70 *Ibid.*, 17.

drillers always began with a sawmill. When they were short of building materials, IFUBR workers flew a helicopter to find wooden boards or iron tubes left in the tundra. Later the Tiumen' officials calculated that there was about one million tons of metal dumped in the region.[71] The Ukrainians even learned how to move a derrick from place to place without disassembling the equipment, which was impossible in the Carpathians. Sometimes, new technology was a problem for the Ukrainians. The Carpathian drillers had to work with new drilling machines (Uralmash–3000 EUK), which had been recently designed by the Soviet engineers. Their drilling solute did not work in the frozen earth, and the chemical lab found new mixtures. The diagonal wells were new for some Ukrainian drillers though familiar to others. Transportation between Ivano-Frankivs'k and Nizhnevartovsk was another problem. At the start, the shifters had to use passenger airlines, which were overloaded. The situation was fixed after a special agreement between Aeroflot and IFUBR.[72]

Ukrainian engineers, drillers, and builders coped with many challenges. But they could not control how their wells were serviced after they finished their drilling work. Therefore, they asked Minister Mal'tsev to bring additional groups of servicemen from the Dolyna region in the Carpathians; the Ministry granted permission. So, in the early 1980s, many drill workers and service groups came to Siberia from the same region in western Ukraine.

The Ukrainian base in Nizhnevartovsk functioned similarly to factorias (trading posts), built by colonizers on the frontiers (contact zones) in the Americas and elsewhere. The base housed 1500 people, had a gym, laundry, garages, and storage. The canteen was built in the Carpathian style—it was even called "Karpaty."[73] It took four years to build the first IFUBR base but soon the Ukrainians had to leave it. When officials moved IFUBR from Nizhnevartovsk to Muravlenkovo, the Carpathian workers built a new base there in two

71 Karpov *et al., Zapadno-Sibirskii neftegazovyi proekt,* 271.

72 Ivaniv, *Krylataia vakhta*, 16.

73 In 1981, IFUBR purchased a specially equipped canteen in Finland, and this was a very happy moment, since it meant that workers could now eat in normal conditions.

years.[74] The new base had a living zone for 2000 workers, several dining spaces, a hall for cultural events, and a medical facility. It was a big and well-organized settlement; for its maintenance, IFUBR spent more than a million rubles in 1986 alone. But as it happened with the first base, the teams of IFUBR were soon forwarded to more distant fields.

By paying attention to leisure, sport, and even homesickness, the Ukrainian managers hoped to preserve cadres. Because of the high pay, the work was desirable; but the Siberian bases were closed communities, with their workers coming from the same country or even the same village. There was nothing to do outside the base. The IFUBR base had its own food and chefs, like a Chinatown district in an American city. Some national bases, e.g. the Estonian one, required the members to produce paper permits to enter. In the midst of swamps and derricks, the Estonian base had paved streets and excellent living conditions.[75] Not surprisingly, some critics of work shifts claimed that such development of Siberian resources was far removed from socialism. In this environment, Soviet peoples did not merge into a Soviet nation.

While heavy drinking was the norm among workers in the region, most of the Ukrainian shifters voluntarily practiced "sober work" *(sukhoi zakon)*. Discipline, organization, and loyalty were crucial for successful work shifts. Roman Iaremiichuk recalled that Carpathian drillers followed the technical instructions and did not comply with the demands to increase production, because exhausting the valuable equipment would destroy it. In consequence, their tools worked longer and enabled them to gain better results.[76] Ukrainian workers could drill deeper and more complicated wells than others. For instance, local specialists from Tumenburgaz drilled wells that were 1200 meters deep, which in certain cases was not sufficient.[77] Therefore they needed help from the Ukrainians, who had experience of drilling 5000-meter or even

74 Ivaniv, *Krylataia vakhta*, 21.
75 Iaremiichuk, personal interview, 2017.
76 Iaremiichuk, personal interview, 2017.
77 Siberian oil normally could be reached at the depth of two thousand meters; *ibid.;* and "Kraina hlybokoho burinnia (2012)."

7500-meter deep wells.[78] Finished in 1989, the super-deep borehole on the Kola peninsula—the deepest well in the world (12 262 meters)—was also drilled by the Ukrainian masters. Ivan Fedoruk claims that Ukrainian workers were sent to the most complicated and challenging sites in Western Siberia, and the drillers perceived this as ethnic discrimination.[79] But Siberian oil fields also gave IFUBR the basis for unexpected and quick development. In 1988, IFUBR in Western Siberia produced six times more oil than its maternal corporation Ukrnafta produced in Ukraine. If in the mid-1970s the company had negative balance, in 1981 the revenue exceeded the plan by almost five million rubles.[80] This additional income allowed hiring more people, buying better equipment and machinery, and investing in social infrastructure, even developing cities back in Ukraine.

The increase in production motivated the company to hire additional workers. In the mid-1980s, IFUBR employed 5500 workers who mostly worked in shifts. This number included 15 brigades, which had 16–18 workers each (around 300 workers in total) to repair drilling equipment and 21 drilling brigades, which comprised 903 workers.[81] Therefore, IFUBR had 1500 specialized drill workers and 4000 personnel, who worked as servicemen and technical employees. These people moved every two weeks for 5000 kilometers, back and forth. Usually these shifters were brought to Siberian base-cities *(bazovye goroda)* by plane, and then used helicopters or land transport to reach their bases. From the small city of Ivano-Frankivs'k, 17 chartered planes carried oil workers to Tiumen'.[82] Three times a week, twice a day, ten big passenger aircrafts transporting 1120 workers at a time, went to the east.[83]

78 *Ibid.*

79 Fedoruk, personal interview, 2017. Fedoruk believes that giving difficult tasks to Ukrainian workers was often coupled with a desire to lessen their production numbers, and therefore salaries.

80 Ivaniv, *Krylataia vakhta*, 33, 19.

81 Fedoruk, personal interview, 2017.

82 *Ibid*. Iaremiichuk remembers that there were 18 planes per week; Iaremiichuk, personal interview, 2017.

83 Normally these were Il-18 and Tu-154, the main Soviet civil carriers, which carried 152–180 passengers.

Additionally, three cargo planes a week carried loads of goods and drilling equipment. Thus, at any given moment, 17 drilling brigades, or more than 450 people, continuously remained on sites in Siberia, while more than 4000 workers were resting at home.[84]

Similar numbers of workers (around 5000 active shifters in total) flew from L'viv, Kharkiv, and Kyiv. In addition, the shifting experts and geologists comprised 20 smaller brigades (350 workers). Ukrgazprom organized another 20 gas brigades (350 workers). On top of that, many hundreds of construction workers were sent to Siberia to build roads and cities. Every year, graduates of oil and gas colleges and of the Ivano-Frankivs'k institute came to work in Siberia. Thus, the combined shifting Ukrainian workforce in Siberia comprised about twenty or thirty thousand organized shift-workers. Thousands of settlers from Ukraine, who worked in Siberian towns and enterprises, added to the complex picture of this unusual migration—distant, voluntary, and eastbound.

In the mid-1980s, pioneering Siberian sociologists surveyed the workers of the major state corporation that was responsible for building pipelines in Siberia—*Glavsibtruboprovodstroi*. 25.4% of these workers identified themselves as migrants from Ukraine. 23.2% came from European Russia, and 6.6% came from the "Volga region," which probably meant the ethnic republics of Tatarstan and Bashkiria. 13.7% came from the Urals, and less than 9% moved to the construction sites from other parts of Siberia. As one could expect, the main reason for moving to these Arctic regions was the material interest.[85]

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84 It is difficult to estimate how often the servicemen, builders, and other supporting personnel moved between the Carpathians and Siberia. For cooks there were regular shifts; for many others shifts were organized according to need.

85 V. V. Alekseev *et al., Opyt resheniia kadrovykh problem v neftegazovom stroitel'stve Sibiri* (Sverdlovsk: Ural'skii gosudarstvennyi universitet, 1987), 27–29; and Timoshenko, *Gosudarstvennaia politika*, 89.

Collapse

Work in shifts seemed easy and cheap for the Soviet economy, but it was very tough for the workers and their families. Those who did shift work in the 1980s usually did not reach their sixties; the head of IFUBR, Myron Ivaniv, died at the age of sixty-one. Roman Iaremiichuk, an important Ukrainian oil researcher and practitioner, acknowledges that many flying workers had health issues.[86] The settlers adjusted to the local conditions, while for shifters these contrasts remained a continuous trouble. Every two weeks a person changed the moderate Carpathian weather into a completely different climate. In Western Siberia the level of oxygen is lower than in Europe. The flying workers typically had respiratory problems and often developed heart disease.

Ivan Fedoruk recalls that in the early 1980s Soviet officials strived to find out how work shifts influenced health. All IFUBR workers had medical cards and were regularly checked by physicians. Myron Ivaniv affirmed that starting from 1982, the Ivano-Frankivs'k Medical University and the Siberian section of the Soviet Academy of Sciences researched flying workers.[87] Novosibirsk supplied the physicians.[88] The findings of this research were never presented to the workers. In private conversation, the doctors told Fedoruk that the results were astonishingly bad.[89]

To lessen the impact of distance travel on workers, doctors advised changing the cycle of work. According to their recommendations, shifters should work for a month and return home for at least three weeks.[90] Instead, the Ministry offered higher

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86 Iaremiichuk, personal interview, 2017.

87 Ivaniv, *Krylataia vakhta*, 65.

88 In 1986, journalists from the newspaper *Pravda* claimed that Soviet officials knew little about the impact of shifts on the health of workers. In the same article they wrote that shifts damaged the physical and social life of Soviet workers: V. Kuzmishchev, V. Lisin, and G. Ovcharenko, "Pliusy i minusy vakhty," *Pravda,* 358 (24980), 24 December 1986, 1–2, *Pravda Digital Archive.*

89 Fedoruk, personal interview, 2017. For Australian studies of stress and health problems connected to FIFO work, see Jill Clover Taylor and Janette Graetz Simmonds, "Family Stress and Coping in the Fly-in Fly-out Workforce," *Australian Community Psychologist* 21, no. (2010): 23–37.

90 Kuzmishchev, Lisin, and Ovcharenko, "Pliusy i minusy vakhty," 2.

salaries; it had plenty of money but the cadres were limited. In fact, many workers appreciated this model of hard work for high salaries. In the Soviet environment, successful drilling teams effectively turned into closed corporations. In his interview, one driller from Ivano-Frankivs'k recalled that in the 1980s the Ukrainian abbreviation for "Drilling Department" *(Upravlinnia Burovykh Robit)* was informally dubbed the "Department for Close Relatives" *(Upravlinnia Blyz'kych Rodychiv).* A former employee of the Dolyna Drilling Department described corruption: "The only way to apply for a job with us only… to put it simply… with a bribe."[91] Limited access made it almost impossible for new people to enter the field without personal contacts.

In 1991, the Ukrainian workers faced new difficulties in Siberia. Fedoruk recalls that a local Russian manager refused to comply with the rules, because Ukraine had left the USSR. "Go back to your country, you've declared independence," the manager told Fedoruk.[92] The latter responded that it was Yeltsin, and therefore the Russian Federation, who had been the first to leave the Soviet Union. In 1994, President Yeltsin issued a new order requiring that all non-Russian teams of drillers in Siberia either leave or be nationalized. Ivan Diak, who supervised the gas extraction teams in Siberia on behalf of the Ukrainian government, arrived in 1992 to convince workers to retain their Ukrainian citizenship. Many of them, however, switched to the Russian jurisdiction.[93] The new, post-Soviet regime of extraction made liberal use of Western technologies, machinery, and human resources practices; organized Ukrainian teams were not needed anymore.[94] Privatized by the ill-fated Yukos corporation and under its management, the old wells increased their production. This was a success for the new

91 A. Orlyk, "Kak zhit' na byvshei 'Udarnoi'?" *Tekhnika molodezhy* 5 (1990).

92 Fedoruk, personal interview, 2017.

93 Krasnohradske UBR, which was the main Ukrainian gas drilling company in Siberia, came under Russian jurisdiction in 1992, see: Zynovii Osinchuk (ed.), *Naftohazova haluz' Ukrainy. Postup i osobystos'ti (K*yiv: Vydavnychyi tsentr "Lohos Ukraina," 2013), 30.

94 Zynovii Osinchuk recalls that one Russian upper manager, whom he refused to name, told him privately that we (Russians) would be better off hiring Germans to drill in Siberia than Ukrainians; Osinchuk, personal interview, 2017.

generation of Russian oilmen who enjoyed unheard freedoms in hiring, firing, and investing. However, they mostly recycled the wells, pipes, and infrastructure that had been developed by the joint efforts of "multinational"—in fact, ethnically structured—Soviet brigades.

In 1994, IFUBR was forced to depart Siberia, leaving the base and equipment that had been built up and acquired over many years of work.[95] In fact, it moved further north to the Polar circle and for some time, worked for Purneftegaz around the Arctic village of Purpe.[96] In 1998 IFUBR did eventually leave the Russian Federation, though some of its units were integrated with Russian companies. The Ukrainians were supposed to leave all the equipment in Russia, but IFUBR managers smuggled most of their machinery back to the Carpathians, where they created a new base.[97] What had started as a socialist heroic enterprise in the late 1970s, finished as bandit capitalism in the early 1990s. Some Ukrainian shifters remained in Siberia under Russian jurisdiction, and several became important Russian managers.[98] Probably, some of them later suffered in connection with the persecution of Yukos, when a part of its management ended up in jail or in exile abroad.

Money and Glory

In Ukraine, the shifters who worked in Siberia were not included in official reports or Party documents. In 1985, this silence was broken: suddenly, IFUBR won the Soviet Red Challenge Banner.[99] For the first time, Kyiv officials recognized the impact that the Carpathian drillers had made on the Soviet economy. Kyiv sent writers and

95 Osinchuk, *Naftohazova haluz' Ukrainy. Postup i osobystos'ti, 30; a*nd Fedoruk, personal interview, 2017. The same year the Russian government tried to purchase the Ukrainian gas pipelines, indicating that this was a turning point in economic relations between the Russian Federation and its former Soviet counterparts.

96 Purneftegaz is now part of Rosneft; https://purneftegaz.rosneft.ru/about.

97 Fedoruk, personal interview, 2017.

98 Iaremiichuk claims that in the 1990s, more than a quarter of top managers of Gazprom were of Ukrainian origin.

99 Fedoruk, personal interview, 8 June 2018.

journalists to Siberia to illuminate the difficult work of oil extraction. The regional media published reports from Siberia.[100] In 1987, Myron Ivaniv decided that IFUBR had enough resources and materials to have its own newspaper, which was titled *Na Vakhti* (On the Shift). In 1987, Ivan Kapustian, the head of a leading IFUBR brigade, received the Gubkin Prize, awarded by the Soviet Ministry for Oil Production.[101] Bohdan Hryniv received the USSR State Prize in 1988; his brigade was acknowledged as the best Soviet oil drilling brigade. Another drilling master, Ivan Orfeniuk, received a Ukrainian State Prize. Many other workers received medals.

The method of work shifts also gained recognition. In 1986, the Soviet State Prize was awarded to a group of workers and scholars for "the development and implementation of the extraction system of the West-Siberian oil and gas by the work-shifting method."[102] Prominent Soviet scholars such as economist Tigran Khachaturov (1906–89) or the head of the Siberian section of the USSR Academy of Sciences Valentin Koptiug (1931–97) were responsible for developing the "scientific basis" for gas and oil work-shifts.[103] But many critics claimed that this method was not really socialist and contradicted the Soviet egalitarian principles. In 1986, *Pravda* newspaper sent its special correspondents to the Tiumen' region to "write the whole truth" about oil and gas extraction. One journalist caught the shifting workers at Nizhnevartovsk airport, where they were had been waiting for four days for the flight to Kyiv. The journalists asked these Ukrainians whether they would not prefer to stay in one place and not to shuttle constantly between different Soviet regions. The shifters said that they would. "One can't buy even a room or space in a dorm, you can't do this even if you have money," claimed one young shifter.[104] The Moscow

[100] Fedoruk, personal interview, 2017.
[101] Ivaniv, *Krylataia vakhta*, 26.
[102] Some of the winners of this prize still work in this field, for instance Aleksei Khaitun, who has published extensively on Soviet shift work; see: Aleksei Khaitun, *Eskpeditsionno-vakhtovoe stroitel'stvo v zapadnoi Sibiri* (Leningrad: Stroizdat, 1982).
[103] Ivaniv, *Krylataia vakhta*, 69.
[104] Kuzmishchev, Lisin, and Ovcharenko, "Pliusy i minusy vakhty," 1.

journalists learned that in 1986, a hundred thousand workers were flying between Siberia and other Soviet lands. Moreover, the Siberian officials told them that in a couple of decades, forty percent of all Siberian workers would be working in shifts.[105] In fact, pro-shifters relied on comparative arguments that are now familiar from the recent literature on the oil curse and Siberia; anti-shifters, meanwhile, believed in the Soviet exceptionalism that could overcome natural conditions such as climate or geography.[106]

Who would spend money on settled workers and their families, *Pravda* asked with some reason, if an oil company could sign an agreement with Aeroflot, build dormitories at the distant "bases," and pay paper cash to the workers? But what was the gain of flying workers, asked the Moscow journalists: was it only their high salaries?[107] The *Pravda* journalists were clearly in favor of abandoning the work-shifts. At the very least, shift workers needed legal and social protection.[108] In Gosplan, there was an idea of signing long-term contracts with the shifters, so that after working in Siberia for a minimum of ten years, shifters would be subsidized to build their own private houses in Southern Siberia and move there. Another idea was that flying workers would stay for three or six months at the well-designed bases, rather than being torn apart by continuous shifts. Nothing came of these plans. When the common Soviet motherland ceased to exist in 1991, the leaders of the "national homes," now separate, strived to protect them from intruders. When the Ukrainians became foreigners like many others—or even worse than others—the Chinese or Tajiks could replace them if necessary.

Independent Ukraine did not acknowledge the hard work of its citizens in Soviet Siberia, and most of them did not receive the

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105 Ivaniv, *Krylataia vakhta*, 65–66; and Kuzmishchev, Lisin, and Ovcharenko, "Pliusy i minusy vakhty," 1–2. If these numbers are correct, then Ukrainian workers constituted more than a quarter of all flying Soviet workers.

106 Fiona Hill and Clifford Gaddy, *Siberian Curse: How Communist Planners Left Russia Out In the Cold* (Washington DC: Brookings, 2004).

107 The frequent divorces and moral life of flying workers were often discussed in *Na Vakhti*; Volodymyr Kryvoruchko, personal interview, 7 June 2018.

108 Kuzmishchev, Lisin, and Ovcharenko, "Pliusy i minusy vakhty," 2.

high pensions that were promised to them. Ukrainian companies, which ran work-shifts in Siberia since 1978 (oil extraction) and 1981 (gas extraction) were not acknowledged by the Soviet Ukrainian government till the mid-1980s. Locally, like in the Carpathians, they were highly visible, since IFUBR reconstructed Ivano-Frankivs'k airport and the company regularly subsidized the city. IFUBR also paid for new apartment blocks, but only a minority of the former shifters could receive housing there—those who were registered in Ivano-Frankivs'k. The company also built for its workers a Black Sea resort in Ievpatoriia; this resort was lost with the Russian occupation of the Crimea in 2014.

Before 1991, it was difficult or impossible to spend those high Siberian salaries in the Soviet Ukraine. The drillers and other workers could not buy land around Ivano-Frankivs'k and build private houses there.[109] Money did not help to unlock the socialist restrictions on property ownership, but connections sometimes did. According to Ivan Fedoruk, sometime before 1990 the oil workers received land allotments in a village near Ivano-Frankivs'k from the head of local collective farm. This woman traded the farm land for the gas pipe that she needed for bringing gas to the village. Fedoruk got these pipes from Siberia and shipped them by cargo train "almost for free," he said.[110]

Cars were the most precious consumer items, and we heard stories about the special disbursement of Volga cars for the former Siberian drillers in Ukraine, which was approved at the top of the Soviet government in the 1980s. When Professor Roman Iaremiichuk received the state prize for an innovation in drilling, he asked Nikolai Mal'tsev, the Minister for Oil Production, to let him buy a Volga. The minister issued a document that allowed Iaremiichuk to buy a Volga directly from the factory; he did so, and drove the car back home to Ivano-Frankivs'k. Ivan Fedoruk received special permission in Kyiv to buy his Volga. Later, each drilling

[109] According to our interviewees, those who owned houses in the villages, expanded this property but could not get apartments in the cities; those who were registered in the cities were able to get apartments but could not receive land allotments in villages.

[110] Fedoruk, personal interview, 2017.

brigade which had good results in production was allocated a certain number of the smaller Zhiguli cars.[111] It was only in the 1990s that some of the Ivano-Frankivs'k oilmen bought land, built houses, and purchased foreign-made cars. But due to the inflation and post-Soviet "reforms," their bank accounts were mostly empty.

Still, the wells, derricks, and pipelines that these Ukrainian workers drilled and built, kept working. According to Thomas Piketty, between 1993 and 2018, Russia had "massive trade surpluses"—approximately 10% of GDP per annum. Accumulated over 25 years, the surplus amounted to more than a trillion contemporary US dollars, which is roughly equivalent to the size of the sovereign fund accumulated through the same period by Norwegian oil exporters. But in contrast to Norway where the sovereign fund has been safe and growing under parliamentary watch, in Russia, Piketty and his team have found only 10% of this money in the official assets of the state.[112] The lost trillion has been smuggled out of the country to feed the tiny minority of wealthy Russians. As Piketty put it, these billionaires are the final beneficiaries of "the natural wealth of the country (which, let it be said in passing, would have done better to remain in the ground to limit global warming)."[113]

Coming largely from Western Siberia, oil and gas have made a large part (e.g. 70% in 2010) of this money. The work of Ukrainian drillers and builders significantly contributed to the extraordinary growth of the carbon-based wealth of the Russian state. A big, though unknown, part of this oil and gas revenue did go to legitimate purposes such as building infrastructure or feeding the Russian people. A tiny part of this revenue even returned to Ukraine as "transit fees"—payments for using the gas pipelines that cross the Ukrainian territory on their way from Siberia to Europe. In 2018, Gazprom was expected to pay three billion dollars of transit fees to

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111 Fedoruk and Iaremiychuk, personal interviews, 2017.

112 Filip Novokmet, Thomas Piketty, and Gabriel Zucman, "From Soviets to Oligarchs: Inequality and Property in Russia 1905–2016," *WID.world Working Paper Series* 9 (2017), http://piketty.pse.ens.fr/files/NPZ2017WIDworld.pdf.

113 Thomas Piketty, "Capital in Russia," *Le blog de Thomas Piketty,* 10 April 2018, http://piketty.blog.lemonde.fr/2018/04/10/capital-in-russia/.

Ukraine.[114] The transit of Russian gas through Ukraine has raised a particular group of Ukrainian oligarchs, some of them now under trial but others still directing the economy. However, this transit also gave Russia opportunities for blackmailing Ukraine and the European Union.

On 16 March 2014, after a visit to Ukraine in the midst of its conflict with Russia, senator John McCain said that Russia was a gas station masquerading as a country.[115] He did not know that a significant part of this "gas station" was Ukrainian-made.

[114] "EU Says Ukraine to Offer Gazprom Discounted Transit Fees," *Reuters,* 19 May 2018, https://www.reuters.com/article/us-ukraine-russia-gas-eu/eu-says-ukraine-to-offer-gazprom-discounted-transit-fees-idUSKCN1IJ2J1.

[115] David Sherfinski, "McCain: 'Russia is a Gas Station Masquerading as a Country," *The Washington Times,* 16 March 2014, https://www.washingtontimes.com/news/2014/mar/16/mccain-russia-gas-station-masquerading-country/.