

The refining industry in south-eastern Poland in 1944-1989

Bartosz Pasterski

Abstract: The purpose of the article is to present the activities of the oil refineries in Jedlicze, Jasło and Gorlice in 1944-1989 in the context of their post-war reconstruction, modernisation, technological development and technical progress. It presents the results of crude oil refining at three south-eastern refineries and indicates their share of nationwide refining. The structure of refinery production (the range of products produced) and issues of economic efficiency of oil refining plants were also analysed. A separate space is devoted to describing the failed refinery consolidation process in 1976-1981. The article concludes with the gradual marginalisation and regression of the development of the south-eastern refineries in Jedlicze, Jasło and Gorlice after the petrochemical combines in Płock and Gdańsk were launched.

Keywords: refining industry, oil processing, Jasło refinery, Jedlicze refinery, Glinik-Gorlice refinery, history of the refining industry

Introduction

The refining industry in south-eastern Poland developed within the oil-bearing areas of the Western Petroleum Basin from Gorlice to Ustrzyki Dolne. Its beginning and intensive development took place in the last decades of the 19th century and the beginning of the 20th, when in different years there were dozens of larger and smaller refineries, established near the discovered and exploited oil fields (including in Ustrzyki Dolne, Jedlicze, Krosno, Chorkówka, Dukla, Jasło, Libusza, Gorlice, Stróża, Limanowa). In the interwar period, however, there was a gradual reduction in the development of the industry in the area and the liquidation of some plants, such as those in Libusza, Krosno and Ustrzyki Dolne, due to depletion of deposits and strong competition from the Eastern Petroleum Basin, among other factors. The years after the Second World War brought a further reduction in ownership, resulting in only three refineries operating in the area between 1945 and 1989: in Jedlicze, Jasło and Glinik Mariampolski (Gorlice) (Kachlik 1994: 407-418).

The oldest of these, the refinery in Glinik Mariampolski near Gorlice, was established through the efforts of William Mac Garvey on the site of an old distillery in 1883-1885 and quickly became the largest plant of its kind in all of Galicia. In the interwar period, it belonged to the Dąbrowa Oil Company and had one of

the largest refining capacities in Poland. The refinery in Jasło (Niegłowice) was founded in 1888, and its construction was completed in 1895. It belonged to the Dutch concern *Petinag A. G. Gartenberg et Schreier – Amsterdam*. Finally, the refinery in Jedlicze was built in 1899 by the Hanoverian Galician Oil Company in Krosno. In 1911, it became the property of the French company *Du Nord*, from 1923 it belonged to the Galician Carpathian Oil Company (part of the "Dąbrowa" concern), and from 1926 it was part of the "Małopolska" concern. All three refineries were taken over by the Germans during the Second World War and intensively exploited. The passage of the war front in 1944 and 1945 caused a lot of damage in them, and the refinery in Jasło suffered the most (Bratyczak, Kossowicz, Pęski 2007: 13-19).

The purpose of the article is to present the activities of the refineries in Jedlicze, Jasło and Gorlice in the period from the end of the Second World War to the time of Poland's political transformation. The operation of the plants is discussed in the context of their post-war reconstruction, organisation, technological development, and technical progress, as well as throughput volumes, refinery production structure and economic efficiency.

Jedlicze Refinery

After the passage of the war front in September 1944, the reconstruction of the relatively less damaged refinery in Jedlicze began. Initially, 80% of the refinery's products were destined for the Red Army. At the time, processing was about 3,000 tonnes per month. In January 1945, production of lubricating oils and asphalt began, and in 1947 a paraffin plant and a gasoline stabilisation plant were put into operation. A year later, a new propane plant was built for de-asphalting oil residues and processing them into engine and cylinder oils (Pasterski 2022: 168-170; Dorynek, 1999: 27).

In 1954, the expansion of the kerosene and fuel refining system was completed, and in 1955-1957, further investments were made: an oil refining plant with decolourising earth, asphalt drum fabrication, an asphaltene oxidation plant, leach agitators for oil refining, and an oil refining plant with furfural. In 1962, asphalt drum fabrication began operations, in 1964, the processing of used oils began, and two years later, a plant for contacting oils with "Filtrol" decolourising earths was put into operation, as well as a plant for nitrogen production. In 1971-1979, a series of further investments were put into operation in Jedlicze: a gear oil inhibiting plant (1975), an oil packaging plant (1976) and a plastic lubricant plant (1977). In the 1980s, as a result of the economic crisis, only minor investments and modernisation were carried out at the Jedlicki plant. In 1987, a tube-and-tower distillation upgrade was completed (Dorynek 1998: 75; Janik [2002]: 242).

Glinik Mariampolski Refinery in Gorlice

The refinery in Glinik began operations shortly after the front passed in early 1945. In a short time, a paraffin plant, a refining plant, and at the end of the aforementioned year, the "Carburol" cracking distillation plant began operating. The 1950s brought a number of new investments. One of the most important was the commissioning of a modern oil dewaxing plant using the Barisol method on July 1, 1952. In 1958, a modern three-stage tube-and-tower distillation plant was put into operation, thanks to which the refinery's processing capacity increased three-fold (APR-S, PPRNGLwG, ref. 299, *Rys gospodarczy Rafinerii z lat: 1887-1972*, k. 1, 2; Kolijewicz, Swidrak 1968: 129; Wrona, Drozd, 1965: 17).

In the 1960s, a number of important investments were made that were vital to the development of the plant. In 1960, the first production of odourless paraffin was launched in Poland. In 1961, the acid oil refining plant was upgraded. In 1963, facilities for the production of petrolatum, gasoline leaching (replacing the obsolete gasoline rectification plant) and LTG maintenance lubricants for rolling bearings began operations. In the 1970s, the process of modernising the Gorlice refinery continued. In 1970, a diesel leaching plant began operation there. The following year, a modern and fully automated production and oil inhibition unit began operating. The lubricant manufacturing division was also upgraded. In 1973, the "Barisol" installation was improved. In 1975, an installation for the collation of wax specifics was put into operation (APR-S, PPRNGLwG, ref. 460, *Dzieje Rafinerii Nafty "Glimar" w Gorlicach z okresu 1883-1989*, k. 11, 14; Boczoń 2000: 47; Wrona, Drożdż, 1965: 17).

In contrast, there were no significant investments in the Gorlice plant in the early 1980s. The work performed was mainly related to environmental protection and the expansion and modernisation of the facilities. In 1984, the Gorlice refinery began operating under the name Rafineria Nafty "Glimar" w Gorlicach (APR-S, PPRNGLwG, ref. 406, *100-lecie Rafinerii Nafty "Glimar"*, k. 115; Ibid, ref. 454, *Rys gospodarczy Rafinerii Nafty "Glimar" za 1981-1987*, k. 2.).

Jasło Refinery

The Jasło refinery, heavily damaged after the passage of the front in January 1945, was demined and initially secured. The process of *ad hoc* reconstruction of the plant and searching for the necessary equipment at other defunct refineries in the country then began. Eventually, the Jasło plant was not reopened until September 28, 1946. On that day, the tube-and-tower distillation began operation, and in the following months coke and oil distillation and partial redistillation (APR-S, PPRNJwJ, ref. 134, *Historia Rafinerii Nafty Jasło od 1888 do 1946 roku*, k. 7; Wieliczko 1974: 36, 38; Zimowski, 1997: 178).

In the 1950s, selective cresol refining (1950), gasoline rectification (1952), "Saprol" boiler distillation (1955), and two-stage tube-and-tower distillation were put into operation. In 1960, a reconstruction and upgrade of the oil refinery was

carried out. Along with the expansion of the refinery, a chemical wastewater treatment plant and an asphalt drum factory were built (APR-S, PPRNJwJ, ref. 1612, *Konferencja naukowo-techniczna na 100-lecie RN Jasło. Historia, dorobek, perspektywy*, k.22; Wygonik 1988: 37).

However, the most important achievement of the period in question was the development and implementation of a modern carbon black installation at the Jasło plant. This was an undertaking of great importance, since Polish refineries had not previously carried out such production, and the development of motorisation and the need to produce more and more car tires were affecting the demand for carbon black. The project was completed in 1969 and production of HAF-type carbon black began. The following year, construction began on more lines to produce other types of carbon black: FEF and ISAF (under Soviet license). However, since the installations were not working properly, it was decided to purchase modern technology under Japanese license. Thanks to this, new types of carbon black in the JAS series were introduced. In the 1980s, investments were limited to modernisation and overhaul of production lines. An expansion of the detergent plant was completed in 1985. In the following year, construction of an air-drying station was completed and the Viskonyl plant was upgraded. In 1986, modernisation of the asphaltene oxidation department also began (completed in 1988). (Mikulski, Wygonik 1988 [n.n.s.]; Kachnik 1994: 405).

Subcarpathian Refining Plants

Since the reconstruction, the south-eastern refineries functioned independently as separate enterprises with their own organisational structure, production and distribution divisions, technical and social departments. However, in 1976-1981, there was a formal merger of the refineries in Glinik, Jasło and Jedlicze and the creation of a joint enterprise called the Ignacy Łukasiewicz Podkarpackie Zakłady Rafineryjne, based in Jasło. The rationale behind this idea was to create a large enterprise with ample financial resources, a larger staff, and wider development opportunities. The goal was also supposed to be greater efficiency, better management and coordination of tasks, and refinery specialisation. However, these assumptions proved illusory, and the company operated only until 1981, when it was split again into three independent refineries as a result of management and economic inefficiencies. The attempted consolidation was a failed organisational and economic experiment that must be noted as an example of the ill-conceived and ineffective measures taken under a centrally planned economy (Pasterski 2020: 107-108; Pasterski 2022; 163-167; Cygan, Dorynek, 2018: 16.).

Oil processing and product mix

The volume of oil processing in south-eastern Poland in the first post-war years was low due to the need to rebuild plants from war damage, complete and start up installations, ensure steady supplies, and implement a new organisational

structure. Once the pre-war capacity was restored, production was increased relatively quickly, using both domestic and imported raw materials. The share of the three refineries from the former Western Basin in total crude oil processing in Poland between 1945 and 1989 was initially dominant but showed a steady downward trend over time. In 1960, their throughput totalled 519,046 tonnes, which at that time still accounted for 59.23% of Poland's total throughput, in 1965 production at 561,266 tonnes accounted for only 15.96%, but already in 1970, the record total of 691,396 tonnes meant only 9.25%. Of key importance was 1964, when the Mazovian Refining and Petrochemical Plant in Płock and the "Friendship" pipeline were launched. Then came the already indicated sharp decline in market share. The result of 2.60% in 1989 emphatically confirmed the permanence of this situation. It showed a fundamental decline in the importance of the south-eastern refineries in favour of plants established in the 1960s and 1970s. Detailed data on the size of crude oil processing at the three refineries and their percentages of domestic production are shown in Table 1.

Table 1. Crude oil processing in the refineries of the South-east from 1956 to 1989 (in tonnes)

Year	Jedlicze	Jasło	Gorlice	Total	Oil throughput in the country (in thousands of tonnes)	Share of south eastern refineries in domestic throughput (in%)
1950		44,561	59,783	104,344	270,700	38.54
1956	123,542	143,193	85,817	352,552	723,300	48.74
1960	179,436	178,228	161,382	519,046	876,300	59.23
1965	177,206	176,503	207,557	561,266	3,516,500	15.95
1970	272,640	211,864	206,892	691,396	7,470,600	9.25
1975	130,000	240,000	250,000	620,000	13,515,500	4.58
1980	115,000	183,000	172,000	470,000	16,126,000	2.91
1984	101,111	124,200	160,000	385,311	13,647,000	2.82
1989	114,702	132,000	150,000	396,702	15,238,000	2.60

Sources: APR-S, PPRNGLwG, Ref. 544, *CSO reports on the execution of the production plan by quantity and value for 1956*, k. 35. Ref. 748, *Annual Balance Sheet for 1960*, k. 4, 8. Ref. 753, *Balance sheet for 1965*, k. 111. Ref. 760, *Annual balance sheet for 1970*, k. 89. Ref. 20, *Financial affairs and balance sheet for 1950. Balance sheet closing*, k. 16. PPRNJwJ, ref. 101, *Jasło Oil Refinery Balance Sheet for 1956*, k. 2, 6. Ref. 110, *Jasło Oil Refinery Balance Sheet for 1965*, [n.n.k.] ref. 1047, *Jasło Oil Refinery Balance Sheet for 1970*, k. 99. Ref. 812, *General characteristics of the development of the Oil Refinery in Jasło in 1960-1975*, k. 28. Ref. 956, *The company's business activity report for 1989*, k. 2. PPRNJEDwJED, ref. 31, [*Plant Activity Reports 1956*], k. 1, 4. Ref. 493, *Production, employment, labour productivity in 1945-1975 /five-year periods/*, k. 10, 11, 29. *Statistical Yearbook of Industry 1945-1965*, Warsaw 1967, p. 556. *Small Statistical Yearbook 1958*,

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*Estimates.

In the early post-war years, the range of refinery production at the three refineries looked modest and consisted of gasoline, kerosene, gas oil, lubricating oil, paraffin, asphalt, solid lubricants, and intermediates. In the early 1950s, the refinery in Jasło produced gasoline, lighting kerosene, diesel fuel, and oils: spindle, light machine, medium machine, engine, cylinder, industrial asphalt, paraffin, naphtholene, petroleum coke. From the early 1960s, the Jasło plant began producing oil additives, pharmacy gasoline, plastic paraffin and performance additives for engine oils. In the next decade, production of technical carbon black began. In the 1980s, the following products were produced: gasolines, fuels, oils, propane butane gas, asphaltenes, lubricants and vaselines, tackifiers and louches, special gasolines, drum bottoms, candelissa, technical carbon blacks, detergents, paraffin, waxes, and additives (Pasterski 2022: 207-209).

The refinery in Jedlicze initially specialised in the production of asphalt drums and oils. In 1956, the Jedlicze plant produced gasoline, oils, asphaltenes, cable compound, tackifier, and asphaltose. In the 1960s and following decades, high-grade oils, gasolines, kerosene, asphaltenes, paraffin, intermediates for the paint and varnish industry, and petroleum grease were produced (APR-S, PPRNJED-wJED, ref. 493, *Production, employment, labour productivity in 1945-1975 /five-year periods*, k. 1.).

The Gorlice refinery produced crude gasoline, petroleum, kerosene, oils, paraffin paste, petroleum jelly, lubricants, asphalts, "K" insulating paste, naphthenic soaps, and petroleum coke. In the 1960s and later decades, the product range was expanded to include pharmacy petroleum jelly, naphthenic soaps, paraffin wax, floor and shoe polish solvent, ATK aviation fuels and Marinol marine oils (APR-S, PPRNGLwG, sygn. 548, *Analysis of the Refinery's operations for 1958*, k. 15; Ibid, ref. 299, *Refinery's Economic Drawing from the Years: 1887-1972*, k. 2; Ref. 1205, *Industry Monograph of the Oil Refinery in Glinik*, k. 87).

Conclusion

The operation of the refining industry in south-eastern Poland in 1944-1989 was influenced both by the difficult post-war conditions and political transition, as well as the broader development processes of the national economy. Reconstruction from the destruction went hand in hand with the reconstruction of the existing model of operation, adapted to the principles of a nationalised and centrally planned economy. The comments made allow us to formulate three main conclusions. First, the refining industry of the former Western Basin was primarily dependent on oil production from the region's mines. Therefore, the decline in the

level of oil production at the mines directly affected the operations of the refineries, and imported supplies by rail transport were neither sufficient nor economically efficient. For this reason, in the first post-war decades, the importance of the south-eastern refineries was still high, and by 1964 the three refineries in the Subcarpathia region and the plants in Trzebinia and Czechowice-Dziedzice provided the vast majority of domestic oil production. Secondly, the relatively rapid reconstruction of the plants from war damage proved to be an important achievement, but already the implementation of modernisation processes adapting the refineries to the realities of the modern petrochemical industry exceeded the organisational, technological, and financial capabilities of the plants themselves. Although many important investments were made in them, they were not able to provide them with real development. Thirdly and finally, the final marginalisation of the refineries in Jedlicze, Jasło and Gorlice was sealed by the launch of the Mazovian Refining Plant in Płock and the Gdańsk Refining Plant. Their much higher technological level, broad range of operations and better transportation location (access to pipelines and shipping) led to the regression of the older south-eastern refineries. As a result, there was a sharp decline in their percentage share of domestic oil refining, and thus their importance in the country's economy. And in such a marginal role, the south-eastern refineries survived until the political transition.

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Bartosz Pasterski PhD – Graduate of history studies at the Institute of History of the University of Rzeszów. He wrote and defended his doctoral dissertation entitled *The Oil Industry in South-eastern Poland in 1944-1989*. His research interests focus on the socio-economic history of the 19th and 20th centuries and modern times, as well as the history of medicine. Author of more than a dozen articles and chapters in monographs, co-editor of the book *Od projektu do legendy Centralny Okręg Przemysłowy po ożiemdziesięciu latach (1937-2017)* [*From design to legend Central Industrial District after eighty years (1937-2017)*]. Member of the Polish Society of Economic History.
ORCID: 0000-0003-4727-890X