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Mining supervision evolution on Polish territories

Abstract
The article deals with the historic evolution of mining supervision on Polish territories through the ages. The scrutiny is based on the accessible processed historic sources. The main characteristics of the proprietary mining supervision were analysed along with the transition to the mining offices system, the basic principles of the directorial rule and a specific of Polish People's Republic period. The author was trying to explain why the mining supervision in Poland evolved in the way it did. A possibility of emerging of a new pattern of mining supervision functioning has been pointed out.

Key words: mining history, mining supervision, mining office, directorial principle, inspective system

Introduction
The purpose of the article is to present historical changes which shaped Polish mining supervision. This topic has not been well researched yet and only some minor contributions were made to address the problem, and even these are confined to Polish State Mining Authority (SMA) circulations and not known to the general public. The topic formulation demands two explanations: what is meant by ‘mining supervision’ and why it is a survey its evolution on Polish territories instead of ‘in Poland’.

There are many definitions of supervision. For the article needs it is quite satisfactory to point out that the notion of supervision always describes the supervisor – supervised relation. The supervisor may – and should – influence the supervised. He is obliged not only to search for any irregularities but his duty is to show the supervised what kind of behaviour is right and to be copied. It is important to perceive mining supervision as a vital role-player in mining, not reduced to a passive controller.

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The discussion of the mining supervision history on historical Polish territories, not only in contemporary Poland, has been chosen purposely. This choice was made because some vital changes in mining supervision took place when Poland was erased from the world map and the most active Polish region (in respect of mining), Silesia, was not included in Polish state territory. So, relegating Polish territories when they were outside Polish state in a specific era would effect creating a false, rapid and inexplicable transformation of archaic mining supervision of Polish Commonwealth of 16th century into modern shape of mining supervision.

1. Proprietary supervision

The history of mining on the territory of modern Poland can be traced as far back as 4000 B.C. Of course we know nothing about mining supervision arrangements at that time. The only thing we are sure of is that such a supervision had to exist. To tell anything definite about mining supervision some written sources are required and we can indicate those sources almost as soon as Polish state enters European stage. From 11th century on we find a scope of privileges (donations) which throw some light on mining organisation in the middle-aged Poland.

As in many other European countries the full-scale mining of ancient Poland was reserved for the sovereign. He was the prior land owner and because of that he enjoyed the sole privilege of minerals extracting. So called monopoles of the prince, known also as regalia touched many dimensions of public life, from the right to rise taxes to the exclusive freedom of beaver hunting. Anything precious or rare sooner or later became the prince monopoly. Without hesitation we can say that most important of all was the right to exploit minerals – treasurers of the Earth. The sovereign executed this rights freely and was entitled to grant them to his subjects and foreigners at will – either in full respect or in a part.

Usually such a grant was done with certain restrictions and fiscal burdens. It was expected from a prince to confirm all privileges concessioned by his ancestors but it is equally true that a prince modified the document by adding his own amendments and additional conditions. Through ages the privileges for barons and bishops were increasingly more generous, yet a prince never renounced all his rights to the mineral exploitation – some burdens and services were still to be rendered to the mineral deposit owner.

Understanding this we are not mistaken stating that in Middle Ages and in early modern ages mining supervision and proprietary supervision were basically the same. Most important things for a sovereign were seam propriety rights, proper profits distribution and, most important of all, fulfilling all the fiscal obligations by a licensee. It means that the core competencies of contemporary mining supervision – work safety and proper technology of exploitation – were out of the supervision scope and were left in hands of miners.

In these ancient times the deposit owner, acting as mining supervision authority, was a mediator and judge between the deposit licensee and workers. We have rumours of a miners' uprising in Silesia as early as in 1220. The miners fought against the Wroclaw bishop who executed tithes from his lease mines. That is a clear evidence that at that times the miners were already a coherent and strong community, conscious of their common interests and the need for solidarity. To assess properly the status and strength of Silesian miners we must bear in minds that in 11th and 12th century every year hundreds of new shafts were built. The exceptionally strong ties, even in the middle-aged society realities, between the miners can be explained by their hard
working condition. We are told that the prince Mieszko the Old sent all horse thieves of his duchy to the mines and deemed it as the most severe punishment.

There is no doubt that work safety and life protection of miners were important, especially for the miners themselves, but unfortunately we have no proof of that in the documents. The reasons of the fact are very simple. The art of writing was a rare competence and writing materials were inconceivably expensive. It took months or even years of hard work of a copyist to produce a single book. The price of a book was comparable to buying a hamlet. In this state of things only most important information was written down. So when we can find any notice of mining these are remarks and facts vital for licensees and mineral deposit owners: what are burdens and obligations attached to a particular mining license, when and under what conditions that licence expires, what are the exact boundaries of licensed deposit etc. Technical aspect of mining (safety regulations included) were not mentioned as not pertaining to the terms of agreement between a sovereign and a licensee. The professional miners were supposed to know all the technical intricacies by practise and these need not to be recorded.

The mining concession was a matter of relations between a proprietor and licensee, how to make sure the mining activities are conducted in a safe way was the licensee concern and none of the owner. However that conclusion does not mean we have no information on miners' work organisation or deposit exploitation schemes. As we know the middle-age society was a bunch of corporations. Any professional corporation was shaped by legal stipulations and the corporational laws were carefully drafted and recorded. Polish miners were no exceptions to this rule. Thanks to this we acquired certain scope of knowledge of mines operation details.

The first written remark of a technical mining supervision is in so called Iglava law (it was transferred from the Czech town of Iglava) – as late as the brink of 13th and 14th centuries. This law provided for special mining jurors, who had obligation to judge all cases connected to mining activities. For the very first time we are met with a term of a mining foreman (sztygar) – a managerial post with responsibility for the technical aspects of mining works. Still those activities were deemed as not included in mining supervision area. In consequence, miners work conditions supervision was ascribed to minor mining officials. Most important of them was the bachmistrz who overlooked all technical operations of a mine. In gold mines special attention was given to the water management as the mine inundation was the greatest danger then. Because of that we spotted a position of a “water master” in charge of prince interests during mining. We know that the water master gave permissions to run mining activities and regulated water protection system. It accounts for the first mining supervisor in the known history of Polish mining. We have some rumours on Polish native “gold codex of Lwowek”, presumably as ancient as the Iglava law but unfortunately it was never written down.

Much more complicated mining supervision system can be spotted in the royal statute of 1368 regulating works of salt mines in southern Poland. There we have a royal mine administrator called zupnik who with help of vice-zupniks and bachmistrzrs managed all the works of the salines. As they were responsible for health and welfare of miners they were coerced to establish some safety rules in order to prevent mine accidents and to restrict the scale of compensation for the injured in those accidents. It is worth mentioning that zupniks were independent from the other royal officials and were responsible to His Majesty only.

In time Polish nobility was strong enough to ensure for themselves the right of free mineral exploitation on hereditary estates. The king prerogatives were constantly diminished but were intact in his own dominion. In 1505 a royal document called the institution of a mine assessors into being. These assessors were obliged to visit mines
regularly and even go “underground” and inspect works conducted there. For the very first time we are able to indicate the commonest work routine of mining supervision – inspections on the spot. That method survived to contemporary times and today inspectors have the duty to report any observed irregularities just like the 16th century assessors had. Of course the assessors were granted with the right to punish law-breakers and reward outstanding miners.

We know a few mining regulations for different mining areas at that time but there was lack of permanent mining supervision institution countrywide. The only and ephemeral exemption was a royal mining bailiff (podkomorzy) who entered history in 1517. He was responsible for mining licence policy in the kingdom and took action against any illegal mineral exploitation. But after that date this post can no longer be heard of. It seems the resistance of the barons proved too strong for that measure of royal mining control and it did not put down roots in the old Poland institutional system.

2. Mining offices system

New shape of mining supervision system was created outside Polish Kingdom - in Silesia. At the end of 16th century special mining offices were established by the dukes and princes of Silesia in their vast latifundium. The task of a mining office was to sell licences for searching and extracting minerals, establish mines and determine the borders of a mining license. Other duties of mining offices included technical and economic supervision of mines, administration of justice in mining cases and operating of miners self-management.

As we can see the mining offices still presented the point of view of a proprietor. In his name they supervised technical works, use of materials, means of exploitation or transportation in mines. It was their responsibility to set differences between miners and mine managers. In fact, the head of a mining office was the superior of all the mines personnel, along with his office staff.

The sharp institutional distinction between supervisor and supervised entities, so natural for the contemporaries, was still not existing. The mining supervision of those times could be described as a “mining police”, being a representative of the owner in relations with mines managers.

What was new was a permanent office for mining supervision. Not a post, not a privilege, but an institution called into being on established rules and included into the whole system of the sovereign administration. In a short time it appeared the mining offices system tended to issue detailed mining activities regulations, not known before. Of course the statutory laws of Wieliczka or Bochnia salt-mines were extensive and specific, but they paid not so much attention to miners’ work conditions as the mining offices regulations did. Most notorious of them was “Ordunek gorny” (Mining order) of 1528 for the mines of silver and lead near Bytom and Tarnowskie Gory cities. It consisted of 72 articles regulating to the slightest detail mining contemporary techniques and methods, based on foreign mining statute books and native mining custom law as well. The interests of the owner and miners’ community were well balanced and great measures were taken to safeguard miners’ life and proper operation of mines. As the water was the predominant danger the countermeasures to prevent this power of nature were described, lines of the surveillance determined and punishments for those who would not comply with the regulations were signalled.

Moreover, Silesian mining offices had more significance for mining supervision development because, contrary to Polish Commonwealth practices, their jurisdiction comprised not only the princes’ mines but, to some degree, private mines were
subordinated to the authority of mining offices clerks, especially when work safety issues were at stake. True, mining offices were still preoccupied with the regalia concerns: they granted mining licences, measured mining areas boundaries, judged all the controversies in mining society and managed all financial and social affairs of miners’ associations. But, apart from that, they were responsible for mining work conditions monitoring and preventing mining catastrophes. In time some sort of routine for mining office inspectors was settled. We came to the knowledge that during a week one day was for a paper work, one for accounting control and as much as four for mines inspection in situ. The next observable similarity in comparison to the contemporary Poland was the separation of mining supervision from extractive industry. To prevent any bias and corruption among the supervision inspectors they were forbidden to take any part in mineral exploitation, either as licensees or as workers. In many aspects that system was very similar to today’s standards in mining supervision.

Successive stage of mining supervision evolution took place in the 16th Austria. Rudolf II, Austrian emperor implemented in his dominion the mining offices system. It was centralised for the whole Austrian Silesia and Kłodzko county with a special official for supervising all exploitation matters (a nadgomistrz). The duties of the nadgomistrz were pretty much the same we listed above describing modus operandi of Silesian princes system, who were, by the way, vassals of Austrian Emperor, so the imitation was a natural one. But a new element was added: when mining works were finished the licensee was obliged to restore the original landscape and compensate for any damages caused by mining activities. This way we came across another dimension of mining supervision: the environment protection and land rehabilitation.

Underlining the innovatory aspects of mining offices system we should not forget it was not the mining supervision we know nowadays. The system was not completed, the nomenclature and competencies of mining officials were in constant change and the mining offices system was frequently mixed with the fiscal and municipal administration. We could say that there was still no mining supervision but a treasury supervision in mining area. The front-line task of that supervision was to take care of financial incomes of a ruler and work safety issues were taken into account as far as they can diminish those incomes.

3. Directorial system

Evolution is not a one-direction move from less perfect forms to the better ones. Evolution meanders and it often put things in regress in some respects while there is a handsome progress in other dimensions. Such a situation can be observed in the evolution of mining supervision too.

In the 18th century the Silesia region went under Prussian rule. Prussian Kaiser Frederic II perceived himself as a great reformer and an ardour progress partisan. Changes touched the extractive industry as well. The mining offices system was topped up with the Upper Mining Office, acting as a higher level in administrative procedure and as a controller toward other mining offices.

In this structure the wide range of the mining offices competencies, among which we can find as well supervisory as managerial powers, were transformed in the 18th Prussia in so called directorial rule. According to the rule the mines management was in hands of mining offices directors. The actual mines owners were reduced to a kind of a stakeholder. They were only entitled to take the mine profits or were forced to pay the balance if costs topped gainings. In this way mining supervision officers provided for technical, economic, fiscal and any other aspect of mine functioning. They collected
petitions for new mining licences, granted those licences, enrolled new mineral seams, set boundaries of mining fields. Only they were entitled to hire miners on all posts, defined payment schemes in mines, decreed a volume of exploitation and settled prices for particular minerals. Their duty was to keep up-to-date registries and mortgages, administer the mining law, inspect mining schools activities, collect various mining taxes and decide on dividends and excess fares.

But not only the form of mining supervision of that time was far from our standards and conceptions. Also the mine ownership was a form of a cooperative association. Every member of such a cooperative had his share. The problem is that a classical cooperative is based on freedom principle, whereas those mining cooperatives were compulsory and introduced in all the mines.

In many respects the transformation proved initially to be a stunning success. Everything was under control, new work methods and technologies were hastily enforced, mining entrepreneurs were constrained and social clash reduced. The mines responded swiftly and obediently to any government recommendations and suggestions as they were run (directly or indirectly) by the governmental officials. The government was able to set the mining policy at its fancy and was given with full reports on every aspect of mining. Any owners and licensees resistance towards new technologies and innovative work organisation was easily crushed.

But the success was equally short-lived as was the real socialism economic growth a few centuries later. The mining inspectors were not ideal managers. Moreover they managed the property of others and were not restricted by a sound economic calculation. If there was no profit they did not suffer directly. No doubt they knew something about mining works and paid attention to the miners' health protection but it is not enough to run a big extractive factory.

From our point of view the greatest failure of the directorial rule was the tangle of supervision and management. Not by a chance in later phases of classical mining offices system the supervision was consciously detached from the whole business of extracting minerals. Any control unit must be independent from the bodies which are controlled. The interests confusion should be avoided. If mining inspectors have any ties and connections with mining industry they cannot be trusted to apply objective perspective while performing their duties and all kinds of irregularities are bound to arise. It is clear that such a sharp separation is extremely hard to achieve because the mining inspector should have solid mining background and experience and even today this rule is observed with immeasurable difficulties.

Nonetheless that distinction is sine qua non for properly operating mining supervision. The Prussian statesmen disregarded that principle. The mining offices operated the mines and at the same time overlooked how mines are operated. In effect the mining supervision was driven back to a sort of internal or self-control. The whole history of public administration proved sufficiently that such a control is definitely ineffective if not detrimental. The simplest explanation is that the mining officials were torn between the contrary directions: they strived hardly to make an economic profit and simultaneously they were expected to put some safeguards on this profit pursuit.

In fact, the directorial system proved to be bound for crisis because of the confusion of supervisory and managerial prerogatives and generated its own ruination in less than fifty years. A special commission by Prussian government exposed technical backwardness of many mines, lack of professionals, outdated production methods, a large-scale corruption and – as to be expected – acute financial shortages in mines budgets. The worst was the fact that mining inspections came to be a pretext or even a farce. When inspectors arrived the mine staff was off duty and the inspectors had no time for any inquiries as they feasted with the mine management. On the other hand it
should be remembered that directorial rule implemented many useful work safety procedures which are seen today as indispensable standards for ensuring safety in mining.

4. Polishing modern form of mining supervision – the inspective system

The directorial rule dragged for some period by a sheer obstinacy and was finally abandoned in 1851. The mines owners, feeling free from the cooperative chains, took back the control of their own mines management, either in technical or in organisational aspects. In the new state of things the mining offices were deprived of mines direct management, concentrating on supervising how this task was conducted by the mines management boards; instead of implementing work safety rules the mining offices inspected how those rules were put into practise.

What was not changed was the mines supervision dominant method, namely – inspections. Moreover, ever since mining offices were unburden with everyday mines management they could (and they did) concentrate on the actual supervision. By opposition to the previous system the new mining office working regime is then described as an inspective system. The newly introduced (but not altogether new) system concentrated all the vital competencies of mining offices supervision in the work safety domain: proper procedure of mining works (a mining works plan was to be approved), health and lives of miners protection, mining lands conservation, mining damages prevention and mining machinery supervision.

One of natural consequences of the inspective system was a new territorial organisation well-fitted to inspection duties. Mining areas were divided in 7 equal mining circles – each one was the territorial properness of a district mining office. A new mining law was issued in 1875 for the whole country and out-dated directives and ordinances were nullified. A certain feature of the directorial rule was yet still discernible – the mine managers were included in the mining supervision administration as its lowest grade.

The inspective system was more concentrated on the safety in mines. The mining plant operations were introduced and their implementation was carefully scrutinised. The mining inspectors checked how miners’ health was protected, supervised machinery, overlooked means of mining areas protection and mining damages prevention. They took care of mining schooling and professional trainings of miners. The mining supervision officials were empowered to halt all the mine operations and to introduce new ordinances ad hoc. For the very first time the scientific approach to underground outbursts was undertaken and written work regulations added to an employer’s obligations. In fact that range of a government control was incomparable with any other public sector. It was due to the significance of extractive industry in Prussian state and to high level of professional risk in this industry branch. The state control exceeded the mining plant boundaries: if a miner was caught drinking in a tavern at a pay-day he was prosecuted. If that offence was committed trice such a recidivist was just fired.

From the conventional point of view the mining supervision should be perceived as an ally of workforce striving to protect them against aggravations of dishonest employers. But the reality was more complicated. For instance when in 1870 the underground persons’ localisation was enforced (miners had to wear special marks to make sure no one was left forgotten underground after the shift was over) the general strike was the answer. The miners suspected the only purpose of that invention was to coerce them to harder, longer and more efficient work.
5. Origin of modern mining supervision in reborn Poland

Mining supervision in Second Polish Republic (1918-1939) was founded on the legacy of Germany and two-level mining offices structure was its main characteristic. Of course some traditions and solutions were taken from all three countries which up to then controlled Polish territories, e.g. Russian concept of a special mining corps was the model for the organisation of the mining supervision structure and for building a professional tradition and a l'esprit de corps in Polish mining supervision administration. Austrian heritage helped to straighten up the problems of oil extraction. But we cannot say the mining supervision of the reborn Poland was a mixture of these three countries mining patterns. Most of Polish mining territories were located in the previous German dominion and Prussian mining organisation was deemed as most advanced in technical and organisational respects.

Upper Mining Authority (the upper level of the supervision system) granted licences for categories of minerals monopolised by the state and was responsible for tax collection in that respect. But its foremost task was to take care of work safety in mining plants or wherever mining works were conducted. In his first public statement the newly-created head of UMA in Katowice Zygmunt Malawski declared to fight fiercely for the just workers’ rights. In order to do that UMA issued its own rules of mining law, supervised the process of miner’s education and dealt with mining damages prevention process.

The grass-root work of making Polish mines safe was performed by territorial mining offices (the lower level). They conducted inspections and accident investigations on a regular basis. Their responsibility was to make sure that mines working conditions and machinery operating were strict to the legal regulations. The number of inspections was in no way limited or categorised; thanks to that the mining offices were able to adapt its activities to the real situation in a local mining environment. The new form of activity of mining supervision were work safety conferences.

Photo 1. The headquarters of Upper Mining Authority in Katowice in the inter-war period
On the whole the system was based on German lines. To tell the truth the inspective system took its main characteristics on the eve of the 20th century and today these stay as the fundaments for mining supervision across Europe. Technical revolution sped up its pace, new work methods were introduced but the corner-stones of the system remained stable. The founders of Polish system should be praised that they refrained from any kind of a mindless revolution and took for granted the best accessible solutions.

What these makers did was an enormous work of transforming the inspective system to the new realities. They had to revise and, in many instances, rewrite various pieces of mining regulations left from three different states to create a viable mining law for a new country. They called into being a system of mining rescue and took into their work outline not only the “hard control” methods but also the “soft” power of safety promotion and best practices propaganda. In just twenty years the scope of the work they did was simply incredible, especially regarding how outnumbered they were in comparison to their tasks. The crowning achievement of that time was the issue of a new, modern, comprehensive Mining Act of 1930.

To summarise we can assess their work as the tremendous “basic work” to set Polish mining supervision into the rails of European standards and they succeeded. One thing still hampered the work efficiency of the mining offices: although their structure consisted of two levels and the hierarchy was clearly defined, for the whole inter-war period two or three Upper Mining Authorities existed. It meant no managing centre for mining supervision emerged (ministerial bodies were too distant and too preoccupied with different tasks to take over that role) and the specific UMAs pursued different work standards and inspection methods. Frequent administrative changes of territorial properness of mining offices made things no better.

6. Polish People’s Republic period: time of regress

The period of 1945-1989 is scarcely perceived as benevolent for mining supervision and there was no meaningful progress in supervision techniques. No innovative work methods were introduced but rather the existing were fixed. The unrealistic production limits and the practise of hiring untrained miners were just two of many serious deficiencies. The Polish communist party ruled everything, including mines operations – side by side with state trade unions and state production trusts. Especially the trusts were huge, heavy but very powerful structures, which made effective mining supervision impossible. It is no surprise that too much managing bodies with obscure competencies in mine work safety and arrogant preponderance of the communist party resulted jointly in making the task of mining offices exceptionally difficult.

It could be argued that there was a kind of a directorial supervision renaissance: the state pursued two contradict goals – the output maximisation was expected along with constant reducing of exploitation costs and efficient accidents prevention. The clash of these divergent aims was the prime cause of high rate of mining accidents in post-war Poland, especially in 1950s.

We compared the communist era with the directorial supervision system and they really have numerous similarities. But this comparison is unjustly in favour of Polish People’s Republic. In both instances the managerial and supervisory functions were confused and in the outcome the supervision was ineffective. But in Prussian state the mining supervision officials lacked of managerial skills but usually possessed good
knowledge of mining techniques and were able to run a mine in all the technical aspects, whereas the communist caciques knew very little about mining but were prone to set fantastic output goals and turned deaf to any reasonable hints of technical and organisational obstacles to achieve these aims.

It is not to say that any positive changes did not take place. The progress was made but it was due to world’s technical advance and the country’s fast post-war growth. Mining output rose mainly due to extensive methods of mining which generated high costs. In terms of a mining supervision improvement we have not much to present. We can point the centralisation of the supervision – finally State Mining Authority was establish to comprise the whole country and in this way the mining supervision modus operandi was unified.

7. Present-day of Polish mining supervision: is something new looming ahead?

In 1988 (the date of 1989 is not correct one) Poland experienced the unprecedented outburst of economical freedom and that situation changed immensely ways of the mining supervision acting. These days Polish mining supervision has to increase constantly safety level in Polish mines, acting on the inspective system basis, while respecting all the time the laissez-faire primary rule in dealing with mining entrepreneurs. In order to perform this risky business the mining offices, besides necessary inspections, are introducing, in ever greater measure, educational and marketing techniques to promote work safety ideas.

At the present stage of evolution mining supervision is predominantly concerned with providing for miner’s health and lives protection. But we can still point out some competencies of the proprietary supervision model. It is because the state is continuously the preponderant mineral deposit owner and tries to execute its rights mostly in the natural environment protection and sustainable growth spheres.

But we can rightly ask if any change of the mining supervision paradigm has occurred? We pointed out three such paradigms in this article: the proprietary model, the directorial rule and the inspective system. Could it be that the last one is the end of mining supervision history on the pattern that Francis Fukuyama described in 1989 in politics?

No one can be sure of the answer but there are hints that there is another paradigm on the horizon. Some countries try to pose mining supervision in the position of a typical regulatory body which sets rules of the game but intervenes rarely (only if the game rules are broken). In this pattern the burden of safety prevention and environment protection is carried out by an entrepreneur (licensee) who is responsible for making all necessary arrangements and best practices. The inspections are very limited and executed mostly post factum when the precautions taken by the entrepreneur have failed. The mining supervised focus is shifted from inspections to mining education and desirable behaviours promotion. As far the outcomes of this approach are very encouraging and some features of this new attitude can be seen in Polish mining supervision.
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