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History and general characteristics of the journal “Engineering Matters”

Abstract. The article analyzes and summarizes the objectivity of reasons and prerequisites for a scientific-technical journal’s appearing on the territory of Transcaucasia at the beginning of the XXth century. Having studied a vast range of scientific materials the author has all the grounds to assert that the beginning of the XXth century demanded the appearance of a qualitatively new journal, which would keep a close watch on the national and foreign technique development and would promote implementing of new technical ideas in engineering and construction matters as well as participate in training of engineering technical talents, and primarily serve the progress in the field of national engineering. Applying the method of historical and scientific analysis in the article it is highlighted that the journal Engineering has focused constructive, creative, and organizational efforts on uniting around the editorial board the best creative forces. At various times, the editors of the journal were outstanding Russian scientists and engineers who, developing the problems of the country's technical development, sought to combine scientific and technical achievements of that society with achievements in the field of railway engineering and structural mechanics, thereby increasing the effectiveness of the journal and constantly strengthened ties with readers. It is noted that taken as a whole, the materials of the journal “Engineering Matters” vividly reflect the state of Russian and world science and technology of that time, tell us about the actual contribution of scientists, technicians, engineers and practitioners to the treasury of world science, make a decisive step towards bringing science to solving problems of industrialization of the national economy, develop a number of problems of capital industrial and transport construction, mechanization of mining operations, problems of improving the quality of industrial products. It has been proved that the creation of technical periodicals of the Caucasus branch of the Russian Technical Society was dictated by the requirements of Transcaucasia which acutely needed a quick and competent solution of technological challenges in upbringing scientific and technical staff.

Keywords: scientific-technical journal; Transcaucasia region; engineering practice; home industry; popularization of scientific knowledge; railways operation

Problem statement.

It is widely known that with the intensive development of the capitalist economy and sharpening of class struggle in Russia at the end of the nineteenth century the role of the periodical press in the ideological-political struggle, economic, scientific and cultural life of the society gradually started growing. In 1900, there were 1002 periodicals. However, many of them were short-lived, a considerable number of established periodicals were disbanded.
The purpose of this article is to analyzes and summarize the objectivity of reasons and prerequisites for a scientific-technical journal’s appearing on the territory of Transcaucasia at the beginning of the XXth century.

The main research material presentation.

It is not without reason, that the main centres of journalism in the late XIXth – the first decades of the XXth century were St. Petersburg and Moscow, which fully corresponded to their role in the economic, political and cultural life of Russia. During 1901-1916, more than 14 thousand periodicals were published in Russia and more than 6 thousand of them were published in St. Petersburg and Moscow. At the same time, journalism had been actively developing on the periphery. In 1901-1916, newspapers and journals of various profiles began to appear in Kyiv, Kharkiv, Odessa, Saratov, Tyflis, Tashkent, and others cities. It is not difficult to explain such an interest in periodicals: the growth of the rate of industry, trade and banking led to an increase in the number of newspapers and journals, aimed at serving the interests of commercial firms, manufacturers and bankers. The development of machine-building, mining, construction of highways, waterways and railways brought to life a significant number of new scientific and technical publications. It is no exaggeration to note that at the beginning of the twentieth century all provinces of the European part of Russia were distinguished by a weak manifestation of public life. And the Caucasus did not make an exception in this respect, but it also occupied one of the last places in the level of active social life. This was explained, on the one hand, by the fact that the scope of government activity in the region was much broader than in the central provinces of Russia, and on the other hand, by the fact that the population of the Caucasus had not yet reached the stage where social activity was a function of social order.

A more detailed consideration on the socio-political life of the Caucasus region at the beginning of the twentieth century has focused our attention on the fact that, despite unfavourable conditions for the development of the region, it nonetheless moved forward and we can cite a number of indirect evidence of this progressive movement. One of the measures of a country’s culture is undoubtedly the degree of printing business development and in this area during the second half of the XIXth – at the beginning of the XXth century there was a considerable progress. The “Caucasian Calendar” was undoubtedly considered to be the most valuable reference edition of the pre-revolutionary Caucasus, which provided materials on the history of the region, its geography and ethnography. The “Notes of the Caucasian Branch of the Russian Technical Society” were of no less importance for the scientific, cultural, and socio-political life of the mentioned region, as well as “Notes of the Caucasian Department of the Imperial Russian Geographical Society”. Their materials were devoted to the development of the Caucasus, the discovery and survey of lands, the development of navigation, the formation of meteorology and climatology. Since October 1899, the Caucasian department of the Imperial Russian Horticultural Society had published “The Caucasian Journal of Practical Gardening”. And since December 1899, the monthly illustrated journal “Caucasus and Central Asia” had
been published. January of the same year was marked by the publication of the bibliographic journal “Caucasian Book Journal”, the appearance of which indicated a significant development of book publishing industry in the region of the Transcaucasia Territory at the beginning of the 20th century [1]. In our opinion, such an increase in periodicals in the region was also promoted by the fact that an increasing number of conscious population needed to satisfy their information requirements quantitatively and qualitatively. Let us not underestimate such facts: the successes, for example in the field of education and social development were usually not independent of its origins; the impetus was given to them, in most cases, by the complications of the economic development of the region, the development of trade and industry. Thus, the general rule was confirmed in Transcaucasia of the early twentieth century. Without exaggeration, in the indicated period, Transcaucasia was on the verge of a tremendous leap in the development of its inexhaustible natural resources. This was convinced by the fruitful activity of engineers, which was apparent in all branches of industry in Transcaucasia region. At the same time, it should be emphasized that the main place in the process of revitalizing the productive forces of Transcaucasia region should undoubtedly be given to the railways, which network increased due to the Baladzharo-Petrovskaja and Tyflis-Karska lines. The first connected Transcaucasia by convenient communication with the West, and the second brought it closer to the East. Thus, the railways carried out a radical revolution in the national economy of the region. The public need for science and technology caused the need to implement scientific and technical information into journal form. The rapid pace of the home industries and national economy’s development in the period of the capitalism development in the Russian Empire led to the accumulation of scientific information and the need for its concentration and “self-organization” around certain social units. Under such conditions, the creation of technical periodicals was dictated primarily by the needs of the Caucasus region, which took path of industrial revolution, the division and socialization of labour, the emergence of the machine industry and training of scientific and technical personnel.

In our conviction the year 1901 demanded the appearance of a qualitatively new journal, which wouldn’t only control the development of the national and foreign technique, but also allowed implementing new technical ideas in engineering and construction matters, to participate in training of engineering technical personnel, and primarily serve the progress in the field of national engineering [2].

Therefore, in the first edition of the journal “Engineering matters” for 1901 in the introductory “From the editorial”, is noted: “Russian technical journals are issued according to the programs compiled in the form of spreading technical innovations, in a broad sense of this word. The journals are trying to post original articles of a descriptive and theoretical nature, acquaint readers with new scientific works of foreign literature, and report new facts from the technical life in the sections of chronicles and minor news.

Sometimes the journals post the design of some building and the presentation of the explanatory note of the whereby the journals are trying to reduce contents as little
as possible, even in prejudice of clarity. We think that under such circumstances one side of the technical journals’ requests, and moreover the most vital side is unsatisfactory. If you offer a journal to publish your explanatory note to any building draft that is not of particular importance in the technique, you will probably be denied because of the lack of space or because of the fear not to be the original, and meantime we need extremely detailed explanatory notes, we collected them and store. The lithograph literature is in wider use in engineering practice than printed literature. A good explanatory note with a detailed calculation greatly facilitates work and reduces time while designing. It is known to everyone who had to deal with projects’ development. We know some cases of the explanatory notes publication to some projects of capital structures and observed their success in practical activity of the technicians, they are highly valued. But it was still random and arranged by rather unfavourable conditions: the publication consisted of a limited number of copies and cost quite expensive, taking into account that the journal considers a single case, for example, the calculation of the bridge of a specific span and a certain system. The journal “Engineering matters” aims to fill this gap, inexplicably existing in our periodical literature, despite the existing demand and interest of technicians to existing section of editions. We have in mind a way to make explanatory notes an available material for technicians in the belief that there is a need for them. We think of printing notes as they come to the disposal of the builders of projected buildings. Making explanatory notes the main material of the journal we give a great place to translated articles, which can sometimes be preferred through compilations. Subsequently, the journal “Engineering matters” will have other standard sections, namely, original articles, compilations, small section of technology news in Russian and foreign journals, as well as bibliography. In addition, there will be placed the minutes on the meetings of the Caucasian branch of the Imperial Russian Technical Society”[3].

Analysis of our study suggests that the initiator of the journal “Engineering matters” was engineer H. P. Perederii, who made his report at the meeting of the Caucasian branch of the RTS on 13 January 1901. It was H. P Perederii who proposed to issue a technical journal at the branch of the Society [7, 8]. The speaker presented in details his thoughts on the publication of such a journal that would meet the objectives and tasks of the Caucasian branch of the RTS. At the same time H. P. Perederii noted that the idea of the journal’s publication emerged among the local engineers – club members who developed the program of the journal and gathered enough materials for printing from 4 to 8 volumes up to 12 printed sheets each. M. V. Karpovych was appointed as the responsible editor, and the drafting Committee included almost all members of the Caucasian branch of the RTS (A. Weiss, H. Kolodyzenskyi, H. Perederii, I. Podolskyi, S. Prokofiev, V. Smuhhee, M. Sokolov, A. Shabulin, Ye. Erdeli, K. Yakubowskyi). So “Engineering matters” focused its constructive creative and organizational efforts on uniting the best creative forces of the region around the editorial Board. The meeting of the members of the Caucasian Department of the RTS reacted very sympathetically to the proposal.
to publish the journal. At the same time Chairman of the branch S. F. Novomaiskyi denied that the publication imposes certain obligations on the Society, and stressed that there were no guarantees that the journal would not cease its existence in the near future.

The views of the meeting’s members were differentiated, some proposed to expand the program of “Notes of the Caucasian branch of the Russian technical society”, others expressed the hope that the journal would have great benefits, providing great opportunities for cooperation not only among local (Transcaucasia) technicians, but also among all Russian specialists of engineering industry as a whole. In addition, the journal planned to place paid ads from various industrial firms, which had undoubtedly been beneficial to the financial side of the edition.

In this context, we are forced to pay attention to the fact that the Caucasian Department of the RTS issued “Notes of the Caucasian Department of the Russian technical society” in separate volumes in Tyflis, from 1868 to 1898.

Analysis on materials of the journal “Engineering matters” indicates that because of the dangerous illness of the Department’ secretary, a military engineer P. F. Koldewin, what became a reason for untimely reporting, the duties of the secretary in April 1899 were entrusted to railway engineer B. A. Butenko. And report on the activities of the Caucasian branch of the Imperial Russian Technical Society in March 1899 was already published in the journal “Engineering Matters” [4]. The modernization of the Russian Empire in the second half of the XIX th – early XX th centuries was associated with the accelerated evolution of national society. At this time, intensive involvement of professionally trained engineers in the field of entrepreneurship began, which in its turn influenced the formation of the business elite of the country. Technical re-equipment of the industry and the rapid pace of railway lines’ construction stimulated the influx of engineers in the business elite of the Russian Empire. All this contributed to the emergence of such a scientific and technical journal, on which pages urgent problems would be developed and discussed and struggle for the creation and prosperity of domestic industry was under way. According to the authors, the journal had to induce scientists and technicians to new research, inventions, improvements, would propagate advanced experience, contribute to the education and improvement of scientific and technical staff. The beginning of the XX th century are the years of the establishment of national railway industry and railway equipment in general. The nature and significance of the railway business in the Russian Empire, the activities of prominent scientists and engineers, the participation of railway engineers in the development of scientific and technological progress are described in detail in publications devoted to engineering in the Russian Empire.

The journal “Engineering Matters” created in Tyflis in 1901, not only reflected the development of technical progress and served as a platform for delivery of contemporary needs, but also pursued new technical ideas in terms of engineering and construction business. Proof of this is the program of the journal, which was read and accepted by the members of the Caucasian branch of the RTS on February 3, 1901.
It was supposed to publish the journal in the amount of 4 books per year in volume from 10 to 15 printed sheets. A subscription to the journal “Engineering Matters” was taken in the city Tyflis. The Caucasian branch of RTS financed the publication of the journal totalling to 1,200 roubles a year from its funds. The subscription price with shipment to all cities of Russia was as follows: for a year – 5 roubles, for half a year – 3, per separate book – 1.50 roubles. Members of the Caucasian branch of the Imperial Russian Society received the journal free of charge. This program and conditions for publishing the journal were adopted by the general meeting of the Caucasian branch of the RTS on February 3, 1901.

Our analysis shows that on the pages of the journal “Engineering Matters” articles on various areas of engineering and railway business: the construction and operation of railways, building mechanics and bridges, waterways, highways, rolling stock and train traction, building materials technology, as well as paid ads of various industrial firms were published. The journal was intended to contribute to the development of all issues relating to the railways operation. It actively assisted in preparation of engineering and technical works. As a result, journal “Engineering Matters” was actively involved in solving major and fundamental issues of development and management of the railway track facilities. All topical issues technical issues of that time found a response in the journal. Every great job was a subject to review.

The deeper we get into the essence of the problem, the more obvious is that the journal “Engineering Matters” played a significant role in the popularization of scientific knowledge. It was the most prominent publication of the beginning of the century and played an important role in the development of journalism in general. During the entire period of its existence, the journal published information about congresses, exhibitions; conferences devoted to engineering achievement in various sectors of the economy and, of course, made a significant contribution to the training of engineers and engineering matter in Russia. The editors of the journal consistently and purposefully spread and heightened engineering and construction knowledge, strongly condemning those who slowed down this process.

The difficulties arose at every step of the way during the period of the journal formation. Portfolio edition of the journal in the first year was half empty. It wasn’t an easy task to fill the pages of the publication with materials corresponding to the program, and therefore only 2 issues came out in the first year. In the following years (until 1905 and 1912), the editorial staff didn’t feel lack of materials.

Accordingly, it should be noted that in late 1905 Editorial Board of the journal, on the one hand, felt a constant scarcity of materials for the journal, and on the other hand, the number of subscribers and readers was significantly limited, thus making further publication impossible. The probable cause of the scarcity of materials for the journal’s publishing at the end of 1905 could be the lack of people with special technical education in the Caucasus who could provide adequate support for the Caucasian branch of RTS in the journal publishing. Our study shows that since autumn of 1905 the Caucasus has been engulfed in a strike movement. The life of the
region was paralyzed, the railways were damaged, and telegraph communication was interrupted. The most acutely “revolutionary” battles took place in Georgia. The political strike, announced in Tiflis on January 12, escalated into an armed uprising. Strikes continued until January 7, 1906. In our opinion, these events were the main reasons for terminating the publication of the journal in 1905.

Seven years passed and the situation in the region changed. The total length of railways and other routes increased in both in Transcaucasia and in Russia in general. In 1910 the railways began to receive revenues from transportation. It is noteworthy that the railway network, in connection with the general revival of the economic situation of the country and the measures taken by the government to improve the railways operation, took a rather favourable position. Net profit per mile of the Russian railways network in 1912 amounted to 7,420 roubles [5].

In the appeal of the editorial committee to the readers in the first issue of the journal “Engineering Matters” for 1912, in particular, it was noted that special technical literature wasn’t always available to people who didn’t speak foreign languages. As a result, it is not easy for readers to learn about new books publishing, and even it is much harder to solve if the materials of this book are suitable for solving any issues they are interested in. So, technical periodicals should make up for the lack of such information and acquaint its readers with the latest news within their specialties [6]. And this was exactly that gave impetus to the members of the CBRTS to resume the publication of a monthly technical journal in Tiflis.

Almost unanimous approving response of the technicians from a whole Transcaucasia showed the recognition of the journal’s publication as being quite up-to-date and was a decisive impetus for publishing the first issue in 1912. The editorial committee was fully aware of all the difficulties would have to be encountered when publishing a scientific-technical journal, and pinned hope on readers who will kindly and sympathetically support this publication, aimed at promoting advanced experience, education and improvement of the scientific-technical staff. In fact, the journal primarily had to respond to the spirit of the epoch, as well as to national and world science and technology.

An analysis of the journal publications for 1912 suggests that during this period the editorial board didn’t experience shortage of printing materials, seeking cooperation with the best engineering forces not only from Transcaucasia, but also from the entire Russian empire, who were authoritative experts in railway, water, air transport and structural mechanics. Most common in the journal were publications on the urban economy, technology mechanization and theoretical works in all fields of technology. Extraordinary attention was paid to the highlighting of issues concerning technical education and training in general. The editors hunted after authors who would arise interest in the journal of the wide circles of the population and enrich science with new fruitful ideas and experience, as well as would contribute to identify relevant areas for further research.
In view of the above, we can conclude that the Publishing Union of the “Engineering Matters” created a model of the Russian technical journal covering purely national affairs, as well as phenomena and events that took place in the world. “Engineering Matters” focused constructive creative-organizational efforts on uniting the best creative forces around the journal’s staff: the editors of the journal at various times were outstanding Russian scientists and engineers who, solving the problems of the country’s technical development, sought to combine scientific and technical achievements of society with achievements in the field of railway engineering and structural mechanics, thereby increasing the effectiveness of the journal, constantly strengthening relationship with readers.

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Історія і загальна характеристика журналу «Інженерное Дело»

Анотація. У статті проаналізовано та узагальнено об’єктивність причин та передумов виникнення науково-технічного журналу на території Закавказзя на початку XX століття. Опрацювавши велику кількість наукових матеріалів, автор має всі підстави стверджувати, що початок XX століття вимагав появи якісно нового журналу, який би постійно стежив за розвитком національної та зарубіжної техніки та сприяв впровадженню нових технічних ідей у галузі машинобудування та будівництва, а також брав участь у підготовці інженерно-технічних кадрів, і в першу чергу слугував прогресу у галузі національної техніки. Застосовуючи метод історично-наукового аналізу, висвітлено, що журнал «Інженерное дело» зосередив конструктивні творчо-організаційні зусилья на об’єднанні навколо редакції кращих творчих сил: редакторами журналу у різні часи були видатні російські науковці і інженери, які, розробляючи проблеми технічної розбудови країн, прагнули поєднання тодішніх науково-технічних здобутків суспільства з досягненнями в галузях залізничної техніки і будівельної механіки, тим самим збільшуючи
ефективність журналу, постійно зміцнювали зв’язки з читачами. Зазначено, що узяті в цілому, матеріали журналу «Інженерное дело» яскраво віддзеркалюють тогочасний стан російської і світової науки і техніки, розповідають нам про дійсний внесок ученых, техніків, інженерів і практиків у скарбницю світової науки, роблять рішучий крок на шляху залучення науки до вирішення завдань індустріалізації народного господарства, розробляють ряд проблем капітального промислової і транспортного будівництва, механизації гірничих робіт, проблем підвищення якості промислової продукції. Доведено, що створення технічної періодики Кавказького відділення Російського Технічного Товариства продиктовано вимогами Закавказзя, який гостро потребував швидкого та компетентного вирішення технологічних завдань у підготовці науково-технічних кадрів.

Ключові слова: науково-технічний журнал; Закавказький регіон; інженерна практика; вітчизняна промисловість; популяризація наукових знань; експлуатація залізниць

История и общая характеристика журнала «Инженерное Дело»

Аннотация. В статье проанализированы и обобщены объективные причины и предпосылки возникновения научно-технического журнала на территории Закавказья в начале XX века. Изучив огромное количество научных материалов, автор имеет все основания утверждать, что начало XX века требовало появления качественно нового журнала, который бы постоянно следил за развитием национальной и зарубежной техники и способствовал внедрению новых технических идей в области машиностроения и строительства, а также участвовал в подготовке инженерно-технических кадров, и в первую очередь служил прогрессу в области национальной техники. Применяя метод историко-научного анализа, в статье освещено, что журнал «Инженерное дело» сосредоточил конструктивные, творческие, организационные усилия на объединении вокруг редакции лучших творческих сил: редакторами журнала в разное время были выдающиеся российские ученые и инженеры, которые, разрабатывая проблемы технического развития страны, стремились сочетать тогдашние научно-технические достижения общества с достижениями в области железнодорожной техники и строительной механики, тем самым увеличивая эффективность журнала, постоянно укрепляя связи с читателями. Отмечено, что взятые в целом, материалы журнала «Инженерное дело» ярко отражают состояние российской и мировой науки и техники того времени, рассказывают нам о действительном вклад ученых, техников, инженеров и практиков в сокровищницу мировой науки, делают решительный шаг на пути привлечения науки к решению задач индустриализации народного хозяйства, разрабатывают ряд проблем капитального промышленного и транспортного строительства, механизации горных работ, проблем повышения качества промышленной продукции. Доказано, что создание технической периодики Кавказского отделения Русского Технического Общества продиктовано требованиями Закавказья, который остро нуждался в быстром и компетентном решении технологических задач и в подготовке научно-технических кадров.

Ключевые слова: научно-технический журнал; Закавказский регион; инженерная практика; отечественная промышленность; популяризация научных знаний; эксплуатация железнодорожных дорог

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