

The 50th anniversary session of the OSJD Ministerial Conference: a new impetus to the development of railway transport in the Republic of Korea



Most recently, on 24 July 2023, Mr. Han Moon He was appointed President and General Director of the Korea Railroad Corporation (KORAIL). Until now he has been serving in various functions for the benefit of the railways of the Republic of Korea for almost 40 years. In his opinion, the L (50th) anniversary session of the OSJD Ministerial Conference has become a significant milestone both in the background of the entire Organisation and in the history of the Republic of Korea and KORAIL. It has also become a new impetus for the development of railway transport in the Republic of Korea. In his article, Mr. Han Moon He dwells more on these aspects.

First of all, I would like to express my warmest words of heartfelt gratitude to the OSJD Committee and all OSJD member countries and railways for their continued support to KORAIL.

The railway transport, as one of the key components of the sustainable development of our society, plays an important strategic role in the economic and social development by providing safe and reliable services.

KORAIL, as the major operator of the Korean railways, will continue to focus on railway safety, technological innovations and sustainable management in cooperation with OSJD and other international partners.

It is a great honour for me to assume the post of President and General Director of KORAIL. Pursuing this function, I will make every effort to fulfill my responsibilities, to increase the production and innovation potential of KORAIL, ensuring the company's role as a reliable railway operator.

Assuming the post of President and General Director of the Korea Railroad Corporation (KORAIL), I would like to note the importance of continuing the development of cooperation within the framework of OSJD, which will further contribute to the successful continuation of work towards expanding the railway network, increasing its competitiveness and efficiency, ensuring the balanced development of all regions of the member countries and fulfilling the objectives of the environmental protection and ensuring ecological neutrality.

As it is known, the L (50th) anniversary

session of the OSJD Ministerial Conference was held in Busan (Republic of Korea) from 13 to 16 June 2023. During this session of the OSJD supreme governing body, held in person (intramurally) for the first time for the past four years, the main outcomes and progress in the OSJD activities over the past period were considered and tasks for the future were set.

This significant event in the history of both OSJD and the Republic of Korea was preceded by a large-scale work, as a result of which, after many years of continuous efforts, the country became a full member of OSJD with the unanimous support of all member states at session XLVI of the OSJD Ministerial Conference, held in Bishkek (Kyrgyz Republic) in 2018. This event was preceded, among other things, by the long and purposeful work of the management and representatives of the Korea Railroad Corporation (KORAIL), which for a long time had been an associate member of the Organisation – an OSJD affiliated enterprise.

Since that moment, the Republic of Korea has been actively involved in the OSJD activities: KORAIL – at the level of the Conference of General Directors (Authorised Representatives) of OSJD Railways, and the Ministry of Land, Infrastructure and Transport – at the level of the Ministerial Conference.

The Republic of Korea takes part in the activities of the OSJD working bodies in various areas, such as the integration of the system for booking railway tickets in international traffic, creation of the OSJD Academy, devel-

opment of an Agreement on the carriage of containers as part of container trains in international traffic, the exchange of an electronic document system for international railway freight traffic and experience in coronavirus prevention measures, as well as plays an important role in organising international railway transportation and strengthening cooperation between the OSJD member countries.

It should be noted that the role of KORAIL in the development of international railway transport and cooperation was also clearly demonstrated during the OSJD Railway Summit and the 10th OSJD High-Level International Freight Conference held in Seoul in May 2015, as well as meeting XXXIV of the Conference of General Directors (Authorised Representatives) of OSJD Railways, held in Seoul in April 2019. This shows how important international cooperation in the field of railway transport is for KORAIL, as well as how serious KORAIL's intentions are for contributing to the OSJD activities.

Taking into account the application of the Republic of Korea on the accession to the Agreement on International Passenger Traffic (SMPS) and to the Agreement on the International Railway Freight Traffic (SMGS), the 50th session of the Ministerial Conference, the members of the OSJD Ministerial Conference who are both Parties to the SMPS and/or Parties to the SMGS Agreements took a decision to concord with the accession to SMPS and SMGS of the Government of the Republic of Korea. This fact will further expand the opportunities for KORAIL to participate in the development of international railway transport.

Currently, KORAIL continues its progressive development based on a 10-year medium-to-long-term plan for the development of the railway network, which is developed every 5 years (the Fourth plan for 2021-2030 was



Hyundai Rotem EMU-320 high-speed train (source: yna-co-kr)

developed in 2021).

Activities to improve the railway infrastructure: new lines are being built and existing ones are being modernised, which made it possible to significantly increase the total length of railway lines and lay a significant number of double-track lines instead of single-track ones. In total, 44 new projects are currently being implemented for the construction and modernisation of railway lines with a total length of 1448 km, including a project for the construction, electrification and increase in the length of double-track lines of conventional and high-speed railways. After the completion of these projects, the operational length of all railway lines in the Republic of Korea will reach 5341 km, and the share of transportation by rail will increase to 17 %. One of the railway projects being in the spotlight is the GTX project. The fact is that the capital region – Seoul, Incheon and Gyeonggi – is home to more than half of the country's population. Therefore, due to the high concentration of the population, residents of this region spend an average of 90 minutes a day to travel to work or school and back. To fundamentally solve this problem, a project is being implemented to create a network of high-speed trains passing through the capital region, the so-called GTX (Great Train eXpress). As part of the GTX project, lines will be built in the form of straight sections in the underground space with a depth of more than 40 m, which will increase



KTX-Sancheon high speed train

coaches and locomotives are being purchased. The KTX-Sancheon high-speed train with head locomotives located at both ends of the train, which was first produced on the basis of own national technologies, was launched in 2010 and is operated on the Honam and Gyeongbu lines. Moreover, thanks to the research and development (R&D) works conducted in the field of wagon-building in 2022, it has become possible to develop electric trains with distributed traction (for speeds of 320 km/h or more), which are characterised by simplified control and high throughput.

the speed by 2 times – from 40 to 80 km/h.

In addition, high-speed railway traffic has been actively developing: in 2004, the Republic of Korea became the fifth country in the world where high-speed railway traffic was launched. It is also the third country to launch high-speed trains (KTX-Sancheon) based on the domestic own technologies, which continue to develop and improve. However, by 2028, it is planned to establish a “Railway Industry Cluster” near the station of Osong, which is a junction point for high-speed railway lines. This cluster will host a second dispatch centre covering the entire country, wagon-building enterprises, rolling stock maintenance and inspection facilities, and a demonstration infrastructure to support the development of railway technologies. The foundation will also be laid for the integration and development of the railway industry by attracting and supporting innovative railway companies.

Activities to modernise the railway rolling stock: high-speed and suburban trains are produced with the use of domestic technologies, new wagons,

Two electric trains have been produced so far, and nowadays their operation has been launched in a test mode. In addition, the production of another 31 electric trains has begun this year, which are planned to be put into full commercial operation from the first half of 2028. In this way, the Republic of Korea will be prepared in advance for entering the era of carbon neutrality by reducing greenhouse gas emissions by switching to rail transport, the most environmentally friendly mode of transport.

KORAIL together with another railway



New ITX-Maum EMU (source: instiz)

operator, SR, operate both the state-owned high-speed railway lines (655.6 km) and conventional railway lines (3363.9 km). In 2022, the volume of passenger transportation by rail amounted to about 1.16 billion people per year, including 88 million people per year by high-speed railway lines. These figures indicate that the number of passengers carried by rail is constantly increasing.



Passenger compartment of the new ITX-Maum EMU (source: instiz)

The goal of achieving carbon neutrality is becoming an increasing priority in the transport sphere, which raises the interest in expanding the role of railway transport and its support, which is considered to be the most environmentally friendly. As part of the Plan for the development of railway logistics industry, it is planned to increase the volume of railway freight traffic to 50 million tons per year by 2026, including through the use of long-haul freight trains and the creation of a combined logistics complex based on railway transport.

Besides, by using actively modern technologies and innovations, it is planned to develop the following areas:

- the sphere of carbon neutrality, including environmentally friendly hydrogen trains, energy efficiency of trains;
- the field of smart railway technologies, such as data-based railway safety control, automatic control and monitoring of wheels;
- the area of increasing throughput, including the use of a hypertube technology and a system of unmanned trains.

In particular, the hypertube technology is a technology of the future for moving at a maximum speed of 1200 km/h in an almost vacuum tunnel, as well as a know-how for significantly reducing travel time between the key cities, including between the metropolitan areas.

Moreover, in line with the global trend towards a carbon neutral society, the test runs of hydrogen-powered electric trains and a study to develop the core technologies of

a hydrogen-powered locomotive are being conducted.

In 2022, a foreign train traffic control system was introduced, and for the first time in the world, a train traffic control system based on a wireless communication system (LTE-R) was implemented on the Jeolla line (Iksan – Yeosu EXPO). Unlike the existing wireless communication system, which only makes it possible to send short messages and conduct voice communication, the wireless communication system (LTE-R) provides group video call services with a transfer rate of up to 75 Mbps between the driver, train dispatcher and facility maintenance and repair personnel, which makes it possible to simplify the process of informing about the situation on the ground as much as possible, as well as quickly and accurately respond to railway accidents and delays in the operation of trains. By 2028, it is planned to introduce the LTE-R system on all sections of the railways.

To conclude, let me express my confidence that KORAIL, as the major railway operator in the Republic of Korea, will continue its activities towards the comprehensive development of railways, increasing their efficiency and competitiveness, ensuring sustainable management of railway traffic safety, introducing digital services and technological innovations, as well as expanding the activities in other areas, in close cooperation with OSJD and other international organisations and partners. ■