

Media release

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Convincing use of innovation

Stadler is building ÖBB's future fleet of rescue trains and will present one of the 18 new Servicejets at Innotrans 2024.

Stadler will unveil a vehicle in a class of its own to an international audience at Innotrans in Berlin on 25 September. The model features a highly innovative trimodal drive concept and safety technology that is specially customised for rail operations, as well as multifunctional rescue and firefighting equipment. It has been given the name ÖBB Servicejet. Along with 17 other identical vehicles, it will form the Austrian railway operator's future fleet of rescue trains, which will also be used for maintenance or to clear infrastructure in the event of an accident. The Servicejet will initially be put into service on the Koralm Railway, whose centrepiece is the 33-km Koralm Tunnel. The 68-metre-long vehicles will then gradually be introduced throughout the entire ÖBB network, to be stationed mainly at tunnel portals for deployment to assist firefighters.

"The railway infrastructure of tomorrow also presents us with completely new challenges in terms of emergency management. The new high-tech, hybrid Servicejet not only heralds a new era of safety in rail operations, but also revolutionises rescue and firefighting work on the ÖBB network. The 18 vehicles will be strategically placed throughout the ÖBB network to ensure that help will arrive quickly and efficiently where it is needed in an emergency situation," says Andreas Matthä, CEO of ÖBB-Holding AG.

"The ÖBB Servicejet is a completely new development that is precisely tailored to the requirements of ÖBB Infrastruktur AG. We are grateful for the trust placed in us to produce this tailor-made solution for Austrian Federal Railways," says Peter Spuhler, Chairman of the Board of Directors of Stadler.

The three-part, permanently coupled special vehicle consists of two railcars and an intermediate car connected by bellows. The cars are equipped with air-sprung, two-axle bogies. The Servicejet is authorised for the Austrian and German standard-gauge network in accordance with the provisions of LOC&PAS TSI.

Innovative electric hybrid drive

The Servicejet can always operate, even if the external power supply is cut. This is made possible by its innovative trimodal drive concept, which guarantees fast, efficient and completely autonomous operation.

The train can run on up to 3,000 kW under an intact overhead contact line. This enables the Servicejet to reach maximum speeds of 160 km/h and allows it to be operated on the ÖBB rail network in regular service, i.e. according to the timetable, not only when it is deployed for active use or for maintenance purposes, but also to travel to the workshop for servicing.

If the external power supply is damaged, for example by fallen trees or a vehicle involved in an accident, the Servicejet switches to electric hybrid drive. In this case, traction batteries and diesel motors supply electrical power to the converters, which in turn supply the traction motors with up to 1,200 kW. Speeds of 120 km/h can be reached in hybrid mode.

The traction batteries installed in the train also allow pure battery-electric operation. The two batteries provide enough power to enable the train to drive out of a smoke-filled tunnel on its own. The batteries are charged via the overhead contact line or the diesel generators. Kinetic energy is recovered during braking and returned to the system.

A highly functional train composition

The Servicejet is first and foremost a rescue train. All three cars, which can be fully accessed from front to back, can evacuate people from the scene of an incident. There is room for more than 300 people in total, mainly on folding seats. If they need to be transported out of a burning tunnel, they will be effectively protected from smoke gases inside the train.

The Servicejet can be used as a “mobile toolbox” or shuttle vehicle for a wide variety of maintenance work and has enough power to supply damaged trains with electricity or to tow them away.

It can also be used to prevent and fight fires, as it has water and foam cannons installed at each end that can rotate and swivel to discharge extinguishing water while the train is either travelling or stationary. Water can also be sprayed onto verges and embankments to prevent them from catching fire or to clean tunnel tubes after a fire. In addition, there are water outlets at each end that the emergency services can connect their hoses to for “manual” firefighting.

The extinguishing equipment, including pumps and foam proportioning systems, is installed under the floor in the intermediate car. An extinguishing agent tank with a capacity of 40 m³ (40,000 litres) of water is located in the superstructure overhead. Seats are available for

passengers along the smoke-protected corridor. The extinguishing technology and turret are operated from the driver's cab, which has a second control station for firefighters. Cameras and powerful spotlights can be controlled from the cab to monitor what is happening outside the train, while thermal imaging cameras show where the source of the fire or people are located, even in a tunnel full of smoke with zero visibility.

The jet fans on the roofs of the railcars, two at the front and two at the rear, are primarily intended for use in the event of a tunnel fire, which is the worst of all the conceivable scenarios. Firstly, they transport the water mist emitted by the high-pressure equipment, thereby increasing the cooling effect in the tunnel tube. Secondly, they can be used to create and maintain counter-pressure so that people can be safely evacuated from a smoke-filled tunnel.

In short, every conceivable deployment scenario can be handled with a Servicejet. Depending on the requirements, it can be loaded with special equipment, for example for fighting forest fires. The necessary equipment is carefully packed in roll containers to save space. The containers are then hoisted on board via a lifting platform before being unloaded again at the deployment site; a total of seven containers can be carried at a time. What is more, the Servicejet can accommodate up to 18 firefighters with breathing apparatus.

The Servicejet firefighting and rescue multiple unit will be presented on track T08/50 at 15.30 on 25 September.

About Stadler

Stadler has been building trains for over 80 years. The provider of mobility solutions in rail vehicle construction, service and signalling technology has its headquarters in Bussnang, eastern Switzerland. It has a workforce of over 14,500 based in various production and engineering locations as well as more than 80 service locations. The company is conscious of its social responsibility for sustainable mobility and therefore stands for innovative, sustainable and durable quality products. The product range in the field of mainline railways and city transport includes high-speed trains, intercity trains, regional and suburban trains, metros, tramways and trams. Stadler also manufactures main-line locomotives, shunting locomotives and passenger carriages. It is the world's leading manufacturer in the rack-and-pinion rail vehicle industry.

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