

Photo: Tomáš Kuchta



The WC cubicles are also located on the mezzanine decks. This is a standard-sized cubicle. Note the inter-car gangway beyond.

space. In business class the distance between facing seats is 2,000 mm, and in economy class, 1,800 mm, while in rows the distance between seat backs it is 985 mm (business) and 930 mm (economy). In both classes the seats have adjustable backrests and are cantilevered from the sidewalls, to facilitate floor cleaning. Passengers can therefore put their luggage under their seat without fear of it being stolen. In business class a wardrobe and catering point serving coffee is provided on each deck. Luggage stacks at the ends of each deck are provided for the storage of bulky items of baggage.

Four lighting strips along the ceiling and in the luggage racks running above the windows provide most of the interior illumination, this mostly being indirect. This gives the impression of greater space, creates more uniform illumination, and prevents passengers from being dazzled. The interior lighting in all the cars is fed from the battery-powered 110 V on-board network. Different lighting arrangements are provided in the vestibules and on the mezzanine decks.

There are two HVAC units in each car, supplemented in winter by a warm air heating system, to ensure that interior temperatures and humidity are comfortable regardless of ambient temperatures. There are separate HVAC circuits for the upper and lower decks. For greater comfort, warm air and cool air is channelled via different air ducts. Special care was taken over insulation, especially the doors and windows, to ensure that there is no excessive heat loss in cold weather, or excessive ingress of warm air in summer. This ensures that energy consumption is reduced.

The side windows, of tinted safety glass with rubber surrounds, are designed to shield the interior from excess heat and cold. There are no hinged toplights to boost ventilation should the air conditioning system fail, since the latter incorporates full redundancy.

Standard heating and air conditioning systems in double deck stock involve the use of air ducts between the interior and exterior sidewall panels, with the same ducts feeding either heated or cooled air into the passenger

accommodation. Instead, Stadler decided to use heating systems which can be installed beneath the floor and within the sidewall surfaces, so that they do not consume space within the passenger accommodation. The air ducts run through the space between the ceiling of the lower deck and the floor of the upper deck, and through that between the ceiling of the upper deck and the roof. They are situated at the sides of vehicle, so that headroom is not compromised.



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The end car with economy class seating also has a dedicated area for handicapped passengers. Here the wheelchair-accessible WC cubicle is situated on the lower deck, adjacent to the entrance vestibule. On the left is a wheelchair lift, for the short flight of stairs.

Each car has a WC cubicle, while one of the end cars has a wheelchair-accessible WC cubicle and other facilities for handicapped travellers. The floor in the WC cubicles is formed of laminate material, and the soap container and tap form part of the wash-basin module. Vacuum retention WC systems are used. The WC cubicles are also designed to meet the needs of passengers travelling with young chil-

dren, being fitted not only with tables for the changing of nappies. These tables are equipped with a germicidal light which disinfects the surface with UV light when the table is closed after use.

The passenger information systems incorporate the latest technology. An audio and video system with two extra-large screens on each deck keep passengers informed and entertain them with advertising. On the exte-



The 2,430 km delivery journey from Switzerland to Belarus, preparations for which took during the 13 months before the first batch of cars were moved to Fanipol, was an exceptionally complicated one, on account of the huge size of these double deck trains. This eliminated all possibilities of moving the vehicles by rail across Europe on 1,435 mm gauge tracks. Starting at Stadler's Altenrhein works, the cars of ESh2-001 KISS were moved, one by one, on low-loaders to the Rhein port of Auhafen in Muttenz, in the southeastern suburbs of Basel (see R 5/14, pp. 54 - 55). **At Muttenz the cars were mounted on their 1,520 mm gauge bogies, and stored on specially designed pallets, which enabled them to rest on the quayside or on the deck of a vessel (see photo, taken on 6 September 2014).**

They were loaded onto a barge for their voyage down the Rhein to Amsterdam. Here they were transferred to a sea-going vessel for the journey up the Dutch and German coasts to Sassnitz. In the latter port they were unloaded, and moved by low-loader the short distance to the freight yard at Sassnitz-Mukran, where they were railed and coupled together to form a complete train on the 1,520 mm gauge sidings. Here it was possible to realise a number of static tests of the train's systems, before it was shunted onto the train ferry bound for Klaipeda in Lithuania. From here the train, ESh2-001, was moved by rail to Fanipol, arriving at Stadler's new Belarus factory on 30 September 2014.

Photo: Jürg D. Lüthard