

Air Cycle Technology: Liebherr Starts 100% “Green” HVAC System Trial with SNCF

July 2015 – Liebherr-Transportation Systems has developed an air cycle technology demonstrator which is currently being installed in one of the regional trains operated by French Public Railways Operator SNCF, financed by the Région Midi-Pyrénées (Southern France). This demonstrator will be tested within the frame of SNCF’s “Eco-Clim” (“Green HVAC”) research program aimed at defining tomorrow’s green train air conditioning systems.

The air cycle technology is a next-generation heating, ventilation and air conditioning (HVAC) technology derived from aerospace applications. It offers substantial savings in life cycle costs, thus reducing significantly the total operating costs of HVAC units over a train’s lifetime.

Since the air cycle technology uses air as refrigerant instead of usual chemical refrigerants (ozone-depleting fluorinated greenhouse gases), it offers better environment performance. In addition to the fact that the unit is refrigerant leakage-free, its simplified design and a reduced number of parts which are easy to exchange make it much more reliable and cheaper to maintain than units that operate with the traditional vapour cycle technology. Furthermore, the HVAC system based on air cycle technology continues to provide cooling even at very high temperatures, e.g. during summertime, and does not shut down.

The demonstrator program aims to provide SNCF with data and facts to evaluate the advantages of the system. Within the program, various operating parameters such as cooling power delivered and power consumption will be compared in real in-service conditions. SNCF will then be able to proceed with the acquisition or maintenance specifications and Liebherr-Transportation Systems will be able to improve HVAC systems for the next generation of passenger trains. During the 24-month trial, operating conditions of a complete life-cycle of the system will be tested.

Liebherr is proud to be a partner of SNCF and of Région Midi-Pyrénées for this trial and to contribute to a greener railway passenger transport.

Liebherr-Transportation Systems – Renowned Manufacturer of Rail Technology

Liebherr-Aerospace & Transportation SAS in Toulouse (France) is one of eleven divisional control companies in the Liebherr Group and coordinates all activities in the fields of transportation and aviation equipment. It employs around 4,900 people worldwide.

Liebherr's transportation systems division deals with air conditioning, hydraulic actuation systems and electronic components for rail vehicles of all kinds, and is backed by many years of experience in the development and manufacture of these technologies. In addition to its own sales and service centers, the division has access to the Group's development and service facilities around the world. This global set-up means that Liebherr-Transportation Systems is there for its customers wherever they may be.

Caption

liebherr-air-cycle-EN-300dpi.jpg

Example of Air Cycle Architecture

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