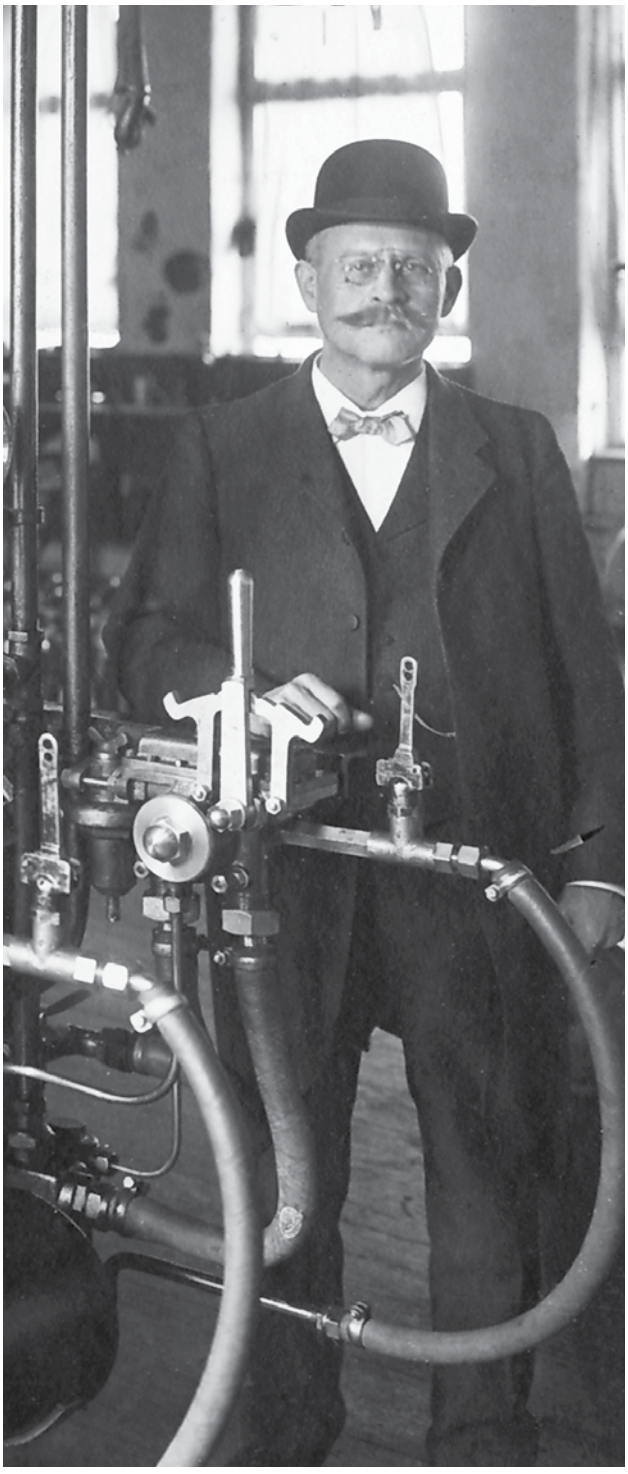
110th anniversary

Looking back on 110 years of expertise



MILESTONES
of the Rail Vehicle Systems and Commercial Vehicle Systems divisions

1905
Success born of good ideas and perseverance

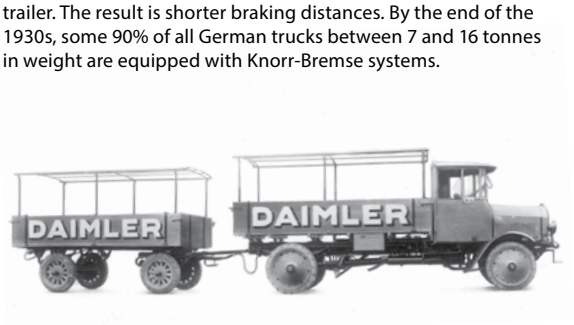
Georg Knorr establishes Knorr-Bremse GmbH in Berlin with the involvement of Loewe & Cie AG. As the owner of the company Carpenter & Schulze he has already been working for some twelve years on improving air brakes for trains. His Knorr rapid release brake brings passenger trains to a halt faster, more safely and above all without the customary juddering.

1918
Breakthrough with freight train brake

Knorr's greatest hit is the Kunze-Knorr freight train brake. Up till now, brakemen distributed along the length of the train have had to turn a wheel to apply the brakes at a signal from the locomotive engineer. As the only supplier of the new brakes for freight trains in Germany and other European countries, Knorr plays a crucial role in reducing accidents.

1922
First patent for truck brakes

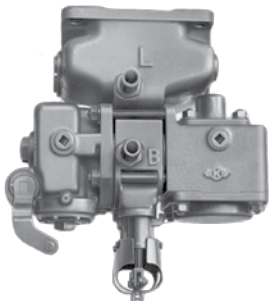
In 1923 Knorr-Bremse is the first company in Europe to equip trucks with air brakes that simultaneously brake all four wheels directly – and at the same time indirectly brake the four wheels of the trailer. The result is shorter braking distances. By the end of the 1930s, some 90% of all German trucks between 7 and 16 tonnes in weight are equipped with Knorr-Bremse systems.



1931

New standard brake for trains

The Hildebrand-Knorr brake (HiK brake) is introduced to the world. This is followed in 1933 by the passenger train brake, and in 1934 by the express train brake. The HiK brake becomes standard in 17 countries and by 1955 there are 280,000 in operation.



1945

Difficult times

Following the Second World War, the company's Lichtenberg plant in Berlin is in the Soviet sector and is completely confiscated and dismantled as part of war reparations. All that the employees manage to save are some design blueprints. In 1946 Knorr-Bremse GmbH is re-established in Volmarstein, and from 1953 onwards its new headquarters are in Munich.

1949

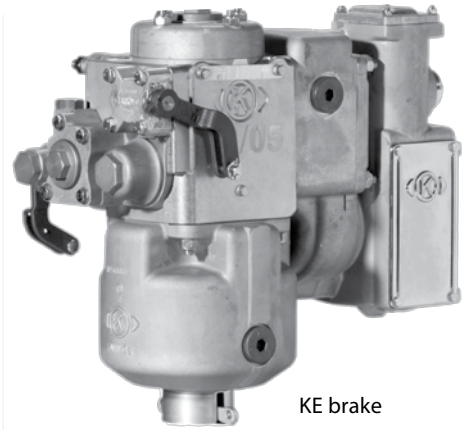
Reconstruction

With the help of the American Marshall plan, the new Deutsche Bundesbahn builds 18,000 new freight cars which Knorr-Bremse equips with brakes.

1953

New milestone for trucks: ALB

Compared with the 1930s, traffic volumes have increased by a factor of six, and trucks are now bigger, heavier and faster. The automatic load-dependent braking system (ALB) is designed to cope with these new conditions. The clearance between axle and frame is used to calculate the load being carried and adjust the pressure in the brake cylinder accordingly.



KE brake

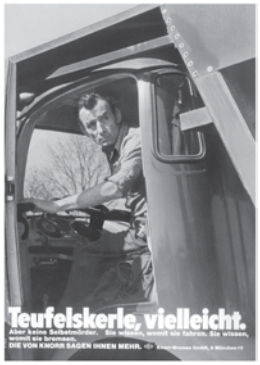
The KE train brake with graduated release control valve

Following intensive development work by Dr. Ernst Möller and Dr. Friedrich Hildebrand, the son of Wilhelm Hildebrand, the Knorr Standard Brake (KE brake) is presented in 1953. Following UIC approval, nearly 1.3 million KE brakes are introduced in more than 40 countries.

1960

Compressed air can do more

It is now also used for functions such as air suspension, level regulation and pneumatic gearshifts or for operating doors on buses. Knorr-Bremse offers a newly developed compressor program for every need.



1969

First disc brake for trucks

At the IAA trade fair in Frankfurt Knorr-Bremse presents the first disc brake for heavy-duty trucks in the form of a hydraulically operated hinged caliper brake.

1970er & 80er

Development of ABS and ASR

Many complex problems first have to be solved. Experiments have been carried out since 1969, and now modern microelectronics and digital techniques enable economically viable solutions to be developed.

1981

First installation of ABS as standard equipment in trucks built by development partner MAN.

1985

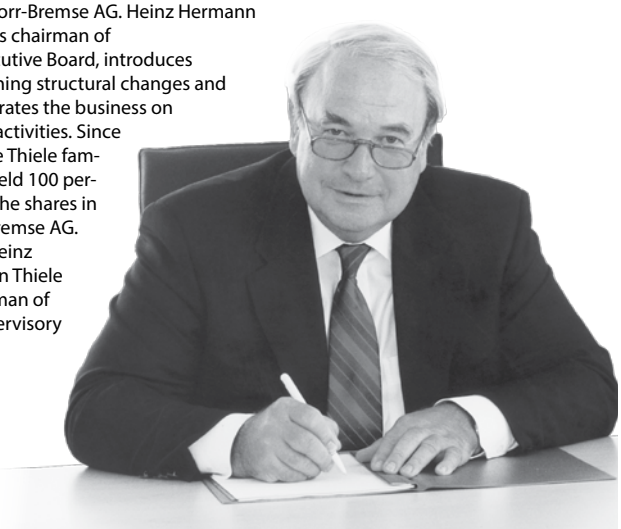
DB 60 for US freight trains

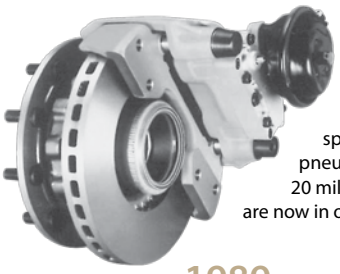
In the 1980s Knorr-Bremse develops the DB 60 direct-release control valve for freight trains, and in 1985 it receives AAR approval. The company uses its US subsidiary Knorr Brake Corporation, founded in 1973, to gain the necessary contacts in a market to which it has hitherto had little access. DB 60 is used from 1985 onwards in the USA for exceptionally long freight trains with several locomotives.

1985

Merger and new boss

Knorr-Bremse GmbH merges with Süddeutsche Bremsen AG to form Knorr-Bremse AG. Heinz Hermann Thiele, as chairman of the Executive Board, introduces far-reaching structural changes and concentrates the business on its core activities. Since 1988 the Thiele family has held 100 percent of the shares in Knorr-Bremse AG. Today Heinz Hermann Thiele is Chairman of the Supervisory Board.





1987

Pneumatic disc brake

Knorr-Bremse attracts widespread interest with a prototype pneumatic disc brake.
20 million Knorr-Bremse disc brakes are now in operation all over the world.

1989

EBS electronic braking system

This integrates the brake control, ABS and ASR into a single electronic system. The advantages compared with pneumatic control include shorter response times and reduced braking distance – which means greater safety.

1991

The dawn of the ICE era – with high-speed braking systems The electro-pneumatic independent brake is further improved and installed in the ICE 1 high-speed train.

1993/94

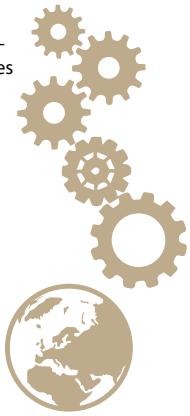
Rail and commercial vehicles separated

The two divisions are now independent companies. This restructuring marks the start of a rapid process of international expansion and strong growth that has continued ever since.

1999

Electronics: Joint venture with Bosch

The company can now draw on the electronics expertise of the commercial vehicle brakes division of Robert Bosch.



2002

Acquisition of Bendix

The takeover of Bendix, a major US m anufacturer of air brakes and ABS systems, gives Knorr-Bremse a better foothold in the American market.

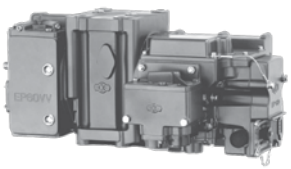
2005

Start von Global Care

Knorr-Bremse Global Care supports people who, through no fault of their own, are in need as a result of environmental disasters, war, poverty or disease.

2007

Huge step forward with EP-60 The EP 60 electronic freight car brake represents a massive technological breakthrough. It is used mainly for extremely long freight trains in the USA and South Africa.



2013

Extensive investment program

Six new facilities and an extensive investment program ensure the long-term future of the company.

2014

Knorr-Bremse develops its own brake pads

By forming the Icer Rail joint-venture Knorr-Bremse becomes involved in producing brake pads, including high-performance sintered pads for high-speed trains.

No end to innovation

Amongst other things, Knorr-Bremse presents a new generation of disc brakes, a new, lightweight compressor casing made of aluminum, a mechatronic transmission control system, a smartphone-controlled system for raising and lowering trailers and a new high-performance driver assistance system.

Power supply systems and automation

Under the new brand name of Knorr-Bremse PowerTech the company now offers a wide-ranging portfolio of on-board power converters for all types of rail vehicle, drawing on the expertise of two leading medium-sized specialists in the field (Transtechnik und PCS Power Converter Solutions) that it has acquired. It also acquires a 100% share in Swiss company Selectron Systems, which produces modern train control management technologies.

Unstoppable success

Customers appreciate the efforts the company makes to offer reliable products and perfect service. 2014 sees Knorr-Bremse's sales revenues leap 21% to EUR 5.2 billion.

2015

Extensive program of investments

Taking all financing models into consideration, over the past five years Knorr-Bremse has invested more than €1 billion in future-proofing its manufacturing sites and production facilities.