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Arabic, English, Spanish:
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Faster, Higher, Stronger – Tomorrow's Technology

Faster, Higher, Stronger – technology has always been a driving force of human development. Engineers around the world tackle every conceivable challenge and regularly achieve the impossible. Tomorrow's Technology is all about amazing adventures, intellectual and physical. **Faster, Higher, Stronger – Tomorrow's Technology** tracks the latest developments from the drawing board to implementation. The brilliant engineers of today are helping to shape the world of tomorrow.

01 Digital Thinking – Intelligent Robots

HD

Robots are becoming increasingly useful to scientists and engineers. They inspect pipes and power stations, dive to inhospitable depths, and analyze rock samples on Mars. Their capabilities are advancing by leaps and bounds. But the artificial intelligence of robots differs greatly from human intelligence. Scientists are working hard to make robots much smarter and more like us.

02 Networking the World – Extreme Pipeline Construction

SD

Pipelines are the lifeblood of our oil and gas-dependent world. Many cut through very inhospitable regions of Earth. Laying pipelines is often a dangerous undertaking and one that presents engineers with huge technical challenges.

03 Mass Transportation – Tokyo's Railway System

SD

Tokyo's urban rail network is used by around three and a half million commuters every day. Shinjuku is the main hub, and the busiest station in the world. It takes up-to-the-minute technology to keep so many people moving smoothly and safely at Shinjuku and throughout the city.

04 Mirror Power – Energy Production for the Future

SD

The sun is destined to play a central role in future energy production. Huge solar power stations are already capturing tremendous amounts of energy and converting it into electricity. The solar furnace designed by inventor Denis Eudeline was far ahead of its time. Its enormous array of mirrors captures and bundles sunlight to produce incredible heat.

05 The Sky's the Limit – Aerial Cableways

SD

Aerial cableways are now an integral feature of transport systems in mountainous regions, moving both people and goods over deep gorges and the most challenging terrain. Aerial cableways are also set to play a key role in city transport networks. In Algeria for example, cable railways are already a key element of public transport.

06 In Free Fall – Improving Parachutes

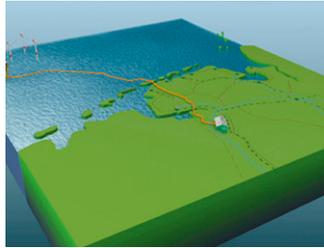
SD

For many decades, parachutes have been an indispensable feature of flight safety. Civilian and military researchers are working on new parachute systems that will bring entire aircraft safely down to earth in an emergency.

07 Unstoppable – Plowing Through the Pack Ice

SD

Double acting ships are the latest technological achievement in the shipbuilding sector. These tankers or freighters are also ice-breakers, which means they can navigate the dangerous Northeast Passage alone, and that is quite a challenge for crews and engineers alike.



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- 08 The Source of Human Energy – A Power Plant Within Us All** [SD](#)
A person generates around 100 kilowatt hours of heat and kinetic energy every year. Researchers have begun to examine how this human energy source could be of benefit to the environment. Their vision is to transform the heat and motion generated by human beings into electricity.
- 09 Powering the Giants – Marine Propellers** [SD](#)
The propeller is a key component of any ship. Its design is one factor determining the ship's speed and energy efficiency. The construction of a propeller is highly specialized work. Every propeller is unique, designed for one particular vessel and manufactured with incredible precision.
- 10 Sky High – Building Taller Turbines** [SD](#)
Engineers are designing ever taller towers for wind turbines in order to increase their electricity yield, which climbs one percent per meter in height. The tallest ever turbine tower clocks in at 200 meters, and the whole thing weighs in at 7,000 tones. Engineers and construction teams perform amazing feats at dizzying heights, to ensure that these technological marvels go into operation.
- 11 Robots With Scalpels – The Operating Theater of the Future?** [SD](#)
This is one medical vision for the future that is not without controversy: A new generation of computers able to work entirely self-sufficiently and conduct operations – more efficiently and more precisely than any surgeon. Before long, it's hoped that robots will be performing open-heart surgery and operating on the brain. But just how safe will these automated procedures be without any human control?
- 12 Quick and Clean – The New Generation Power Grid** [SD](#)
The future of European wind energy is out on the high seas. Vast wind farms are planned 120 kilometers off the German North Sea coast – further away from the mainland than ever before. Transporting the electricity over such long distances requires new technology: High-voltage, direct-current transmission.
- 13 Technology in Miniature – A Scale Model of the World** [SD](#)
How is it possible to travel across all of central Europe and the US in just a few hours? The answer is simple: By visiting the "Miniatur Wunderland", or miniature wonderland, in Hamburg, Germany – an enormous model railway built on the scale of 1:87. 1,000 trains, 11,000 wagons and 200,000 plastic figures animate this exciting, tiny world. The attraction is a technological masterpiece that pulls in the crowds.
- 14 Airbus – Every Day A New Aircraft** [VoD](#) [HD](#)
Almost every day, a new aircraft leaves the Airbus plant in the northern German city of Hamburg. This is where the final assembly of the short- and medium-range A320 takes place – using components brought in from all over Europe. It's also where the huge A380 gets a coat of high-performance varnish in the world's largest painting hangar. New plastic components reinforced with carbon fiber are being developed to make the aircraft of the future lighter and more stable. Technicians and flight crews conduct virtual tests on each and every plane. The high-tech future is taking off.

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15 The Port of the Future [VoD](#) [HD](#)

Container ships have always been big and they are getting even bigger. More and more cargo has to be transported and handled as speedily as possible. But how will the world's ports cope with these higher volumes in the coming decades? While Dubai's Jebel Ali Port has focused on expanding its footprint, the port of Hamburg, where more real estate is not available, has focused on automation and rationalization, and Rotterdam has built the world's first fully-automated terminals. What do these developments and trends mean for the ports of the future?

16 Offshore Heroes [VoD](#) [HD](#)

Out on the high seas, the wind and waves rule – a fact that is respected by the builders of offshore wind farms, as they erect gigantic structures out at sea. One large German wind farm is 140 kilometers from the coast. Manufacturing the huge turbines on land is only the first challenge facing constructors. Living and working out at sea requires courage, strength and skill in a daily battle with the forces of nature.

17 High-tech Trucks on the Autobahn

[VoD](#) [HD](#)

In goods traffic on Germany's highways, nothing is left to chance. The trucks are part of a high-precision logistics system. Customer deliveries are timed to the minute. To ensure the system works, trucks are monitored via satellite. Sensors in the asphalt count the vehicles: if there are too many on the roads, the speed limit on the digital road signs is reduced. Congestion managers provide real-time information to radio stations and navigation systems. The priorities are to prevent traffic jams and ensure maximum safety.

18 Man's Dream of Flight [VoD](#) [HD](#)

"I fly, therefore I am" – that is the idea driving inventors and engineers to fly ever higher and further using as few resources as possible. Their innovations, such as paragliders and wingsuits, are not only exciting for extreme sportsmen and women. Latest developments in ultra-light aircraft and solar aircraft are paving the way for a more flexible and environmentally-friendly future.