Aerial lifts

Safe ascent in any weather

Get in, push the button, and away you go? Actually, controlling an aerial lift is a bit more complicated than that. To ensure cabins full of passengers reach their lofty destinations safely no matter how hard the wind blows, the control specialists at SISAG trust in the expertise of B&R.

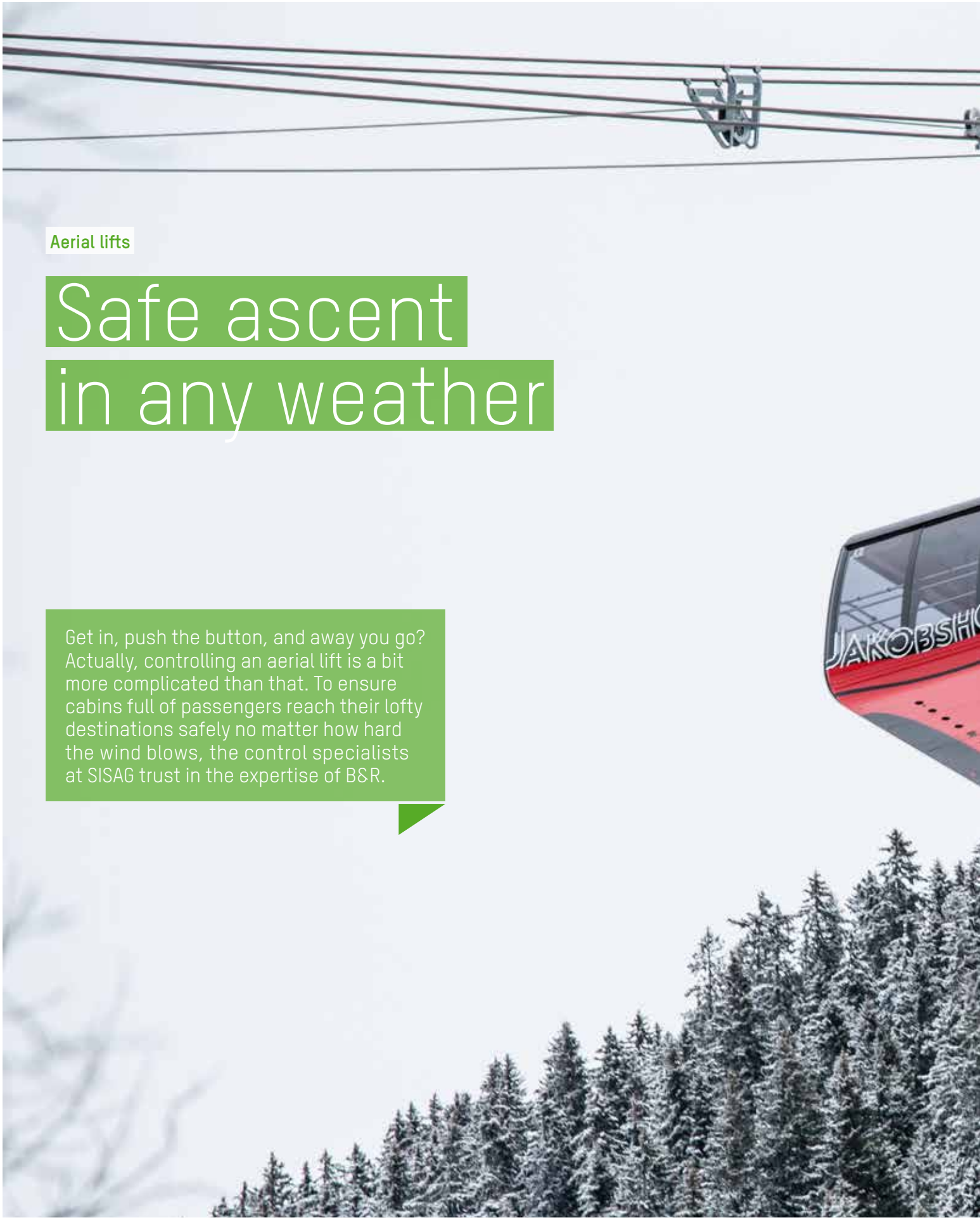

Photo: © F.X. Bruhin

The new gondola lift at the Jakobshorn resort features a PLC, touch screen operator panels and frequency inverters from B&R.

The weatherman was right – the sun is just starting to peek over the ridge. A stiff breeze still holds the temperature just below freezing, but the first row of the parking lot is already filling up.

Skis shouldered, the early risers march with lumbering determination toward the ticket booth. The first gondola exits the station and begins its ascent, a sign that the operators have begun their daily routine of unparking the cabins from the garage, hanging them on the cable and performing their maintenance check. At the operator's station, they test the control panel and buttons to make sure everything is in order.

Six letters say it all

The acronym SISAG comes from the German for aerial lift and safety technology. As the name suggests, the Swiss company with around 100 employees at its headquarters in Altdorf and office in Monthey specializes in the area of control and safety technology for aerial passenger transport systems. "From intern to director, we all know each other here," says SISAG board member and marketing manager Erich Megert.

Expertise trumps cliché

The SISAG team includes six developers who create hardware and software solutions for a broad spectrum of passenger transport applications, including full-scale motion control and process control systems.

Customers include traditional lift operators like Weisse Arena, as well as international system manufacturers who also build gondola lifts and cable tramways for urban transportation.

SISAG was also responsible for the operations control technology in the Skymetro people mover at the Zürich Airport.

20 years of cooperation are explanation enough

When it came time to revamp its control systems in 1996, SISAG decided to make the move to programmable logic. Among the numerous industry players whose systems were evaluated, B&R stood out. "B&R's system is designed for multitasking and real-time operation," says SISAG's head of development, Nik Püntener. It also allows SISAG to program in high-level languages.

SISAG knows that without motivated and qualified employees, the lift will never leave the station.

In implementing the transition, B&R ensured that even 20-year-old systems could be retrofitted. "We're very happy with B&R. Their innovation shows in the frequency with which they introduce sophisticated new products. The B&R team in Frauenfeld provided outstanding support in close proximity to our customer," praises Püntener.

Networking the best of two worlds

The lift is controlled by X20 PLCs installed in the base and peak stations. A touch screen operator panel makes the whole system about as easy and intuitive to handle as a tablet PC. The frequency inverters that drive the cables communicate via the high-performance Ethernet standard, POWERLINK.

The general increase in networking in the passenger transport industry is making it easier to perform remote maintenance and diagnostics on aerial lift systems. "Until recently, the communication technology used in lift systems was very rudimentary," explains Püntener. "The attendant in the local station was able to see that someone had stopped the lift, but had no idea why. With the freezing cold and heavy winds you experience at 3,000 meters above sea level, WLAN communication is prone to failure. That's why we produce our own communication systems that link directly to B&R's solutions and send E-stop signals straight to the drive control system."

Nik Püntener
Head of Development, SISAG

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In 2006, SISAG developed a new control simulation using B&R's Visual Components. The transition to Visual Components and PLC technology have brought further significant improvements in communication. "We've got a whole new range of possibilities, even up in the deep snow and biting cold," says Püntener. ←