

LIGHTS OFF, SPOTLIGHT ON!

Safety from a neutral perspective is discussed at TÜV Austria Lift Day.



The popularity of TÜV Austria Lift Day was evident by the crowded scene inside the lecture hall.

The courtyard of the Museum Quarter is lined with brightly colored seating areas.



by Undine Stricker-Berghoff

TÜV Austria, an advocate for safety, brought together about 250 participants at the Center of Architecture in Vienna's Museum Quarter in May for TÜV Austria Lift Day. The majority of the participants were lift manufacturers, including a few from southern Germany, on top of many operators, such as facility managers, as well as the officials and inspectors representing the host. With one exception, all speakers came from TÜV Austria. This mixture, combined with Austrian cuisine, gave a special atmosphere to the day.

Moderator Vera Drach B.A. from the TÜV Austria Academy directed the day's activities. The morning was dedicated to digitization, and the afternoon focused on laws, standards and their effects. The conference was opened by Mag. (FH) Christian Bayer, managing director of the TÜV Austria Academy.

Engineer Thomas Maldet, head of Lift Technology at TÜV Austria, spoke on "Current Developments in the Lift Sector." Digitization is steadily increasing but must not overextend users. He named communication, positioning, remote monitoring and telecontrol, speed dials, belts, miniaturization, and energy recovery as the latest steps in the evolution of the lift in the 2000s. He sees future developments coming in drives, communication, operation (such as control via smartphone), novel concepts (e.g., Internet of Things (IoT), 24/7 monitoring [including

predictive maintenance] and horizontal transportation) and novel components (e.g., functional safety).

Functional safety is the part of the safety system dependent on correct operation of the safety-related system and other risk-mitigating measures:

- ◆ Avoiding systematic errors in development
- ◆ Monitoring ongoing operation to detect random errors
- ◆ Reliable mastering of detected errors
- ◆ Transition to a status previously defined as safe

The necessary components to achieve this safety status include sensors, transmission elements, controls, evaluation units and actuators. To avoid serious effects, software design and changes, blackout and operating and maintenance instructions must be considered.

Maldet also quoted from the safety report. The number of accidents in Austria is low; severe accidents are rare; and there have been no fatal accidents reported in the past 11 years. The main causes of falls and accidents in 2018 were automatic car doors (65.7%) and insufficient positioning accuracy (19.2%). From accident analyses, Maldet concluded that descriptions by victims and witnesses were sometimes exaggerated but never fundamentally wrong. His talk ended with a general look into the future. As trends, he sees urban mobility, the increasing demands on the users and the growth of the "silver society," the aging population.

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Philipp Brübler from Kollmorgen presents on controls.



Stephan Störmer talks about legal regulations for lifts.



The speakers, moderator and host gather for a group photo.



(l-r) Gregor Mayer and Robert Schgör engage in a discussion.

STORMER DISCUSSES LIFT DAY

Stephan Störmer, an engineer with TÜV Austria Services, Infrastructure & Transportation Austria, discussed Lift Day, TÜV Austria and issues facing the industry in a brief interview with ELEVATOR WORLD Europe (EWEU).

EWEU: The term “silver ager” was heard several times during Lift Day. Will this generation keep up with the information-technology (IT) requirements in the lift, too?

STÖRMER: Some “silver agers” have more difficulties, but others are just as intense and adept users as younger ones. The more important thing about the lift is to ensure accessibility. In Austria, this is part of a specified test order based on, for example, EN 81-70.

EWEU: The topic of IT safety and security, as well as blackout, almost resembled an exciting thriller. What role does TÜV Austria play in this?

STÖRMER: We have safety and security checks of hardware and software in our portfolio according to Lift Directive 2014/33/EU, but, also, tests concerning IT security. Today, the type examination of lifts and safety components does not include this IT security. In the future, this might be combined. We are noticing a perceptible increase in these areas.

EWEU: What is your statement on the topic of standardization in lift construction?

STÖRMER: Generally, I am a convinced European. Both European standards (EN) and national standards (for example, ÖNorm) are both valued and must complement each other. However, standardization must remain viable and affordable for everyone involved.

The second lecture, "Innovative Control Concepts," was presented by Philipp Brüßler, MBA, of Kollmorgen Steuerungstechnik in Germany. He began by defining the terms used in digitization. He then presented the three basic concepts: cloud, remote control and application programming interface (API). Through these, stakeholders — such as maintenance companies, users, lift manufacturers, communications manufacturers and operators — are linked.

Information technology (IT) security is influenced by various components. So, software must be tested for errors, data ownership must be regulated, and the infrastructure must be safe. Protection can be provided by up-to-date security software at all levels and with all involved parties, end-to-end encryption and two-factor authentication. It was exciting for the audience when the speaker demonstrated a live hack via Structured Query Language (SQL) injection. Through this method, he was able to log himself into a high-security cloud within seconds without correct access data. However, the main point of attack in companies is still social engineering, such as email with false invoices or a promise of money from an exotic king pushing malicious code.

Talking to ELEVATOR WORLD Europe, Brüßler made clear that Kollmorgen does not offer a proprietary system; rather, the company's control is based on CANopen. It also offers an API for others to build an app or bring their data, via the API, into their own cloud. Regarding the importance of digitization in his company, Brüßler noted that the number of employees in the software department is growing steadily, but the hardware group is still significantly larger.

Two speakers presented "Retrofit and Modernization of CE-Marked Lifts (§ 6b ASV 2015)." The theoretical part was addressed by engineer Stephan Störmer from TÜV Austria Services, Department Infrastructure & Transportation Austria. He said a retrofit without the CE mark must be done in accordance with ÖNORM B 2453-2, while a retrofit with the CE mark should be in accordance with lifts safety ordinance §6b ASV 2015. The trigger for the retrofit or change might be a swap or modernization of components. Austrian Standards Committee 017 (Lifts, Escalators and Moving Walks) has searched for a definition of the term "change" across Europe and even sent a letter to the Federal Ministry for Digitization and Business Location but, so far, has received no reaction. Consequently, two tests are currently possible and even necessary: new components are tested by the lift inspector, and the Notified Body tests the entire lift to fulfill the fundamental safety and health

requirements (GSAs) of the ASV 2015. Examples from practice, which represent a change, were presented by Ing. Thomas Walli. He named a replacement of buffers when spring/polyurethane/hydraulic type or number are changed, or the replacement of suspension means when, e.g., type, number or diameter are changed.

A rising danger due to the increased use of renewable energies is a sudden, supra-regional and long-lasting blackout. Hence, Stefan Pfefferer, B.Sc., contributed the topic "Blackout — If Nothing Works Anymore," not even the lift. A blackout goes through three phases:

- 1) No electrical current: total standstill for hours
- 2) No telecommunications: standstill for days
- 3) Rebooting infrastructures and restore supply: weeks to months

Provision consists of self-help and organized help. Measures during a power failure can be read on the website zivilschutzverband.at. It pays to think through the effects of a power failure. The speaker reported from his own experience: doors no longer functioned; all were retrofitted with batteries. Critical infrastructure elements are ranked as: energy, water, nutrition and information technology. A planned test blackout was recently carried out in Austria. One result: the warehouse management system of pharmacies prevented the location of existing medicines for 14 days. What should you do as a company? Develop a blackout concept in a task force with the authorized lift person, for example, to clarify procedures and answer individual questions. There is no lump solution.

Maldet addressed lift operation during a blackout. Some lifts need an extra backup power source: firefighter lifts, 90 min.; lifts with special requirements (e.g., evacuation lifts at event venues and skyscrapers), 30 min.; lifts in medically used areas, up to 24 hr. Possible means include backup generators, quick and instant power supply units or a second, independent electrical network. Most lifts simply stop immediately in an undefined position without a backup power supply. This may necessitate the use of in-house personnel to rescue trapped people, despite assignment to third parties, while some lifts provide an automatic emergency rescue procedure accomplished mostly with battery backup. Emergency call systems and emergency lighting must last a minimum of 1 hr. Remote-monitoring centers need a 24-hr emergency power supply with redundancy. An emergency plan is required for this.

The final lecture, "Operating and Maintenance Instructions: Contents and Consequences for Lift

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Operation," was developed in a practical and entertaining dialogue between lawyer Mag. Robert Schgör from Schreiner Consulting and engineer Gregor Mayer. Maintenance companies must employ competent personnel who have expertise and practical experience. The basis for maintenance is risk assessment, and the manufacturer must provide maintenance instructions. A general and basic operating manual is difficult to imagine, as a great deal of information is needed to be shared between the operator and maintenance organization to ensure safe operation.

Maldet again gave the final words. He said the lift is a place of silence and noted that 6% of Southeast Asians surveyed have slept in a lift. This emphasized that the lift must be a safe place.

A central component of Lift Day was the opportunity for communication among the participants within the coffee breaks and during a lunch of fine local cuisine. The Viennese coffeehouse tradition was evident in the constant, busy buzzing around the coffee bar during the breaks and between the speeches by the many participants. Those who

have an appetite for a lively presentation of enduring knowledge, as well as for meeting new and old contacts, will want to come to Vienna for the 18th TÜV Austria Lift Day, planned for May 16, 2020.

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A lunch of local cuisine is served in a hall that offers historical ambience.