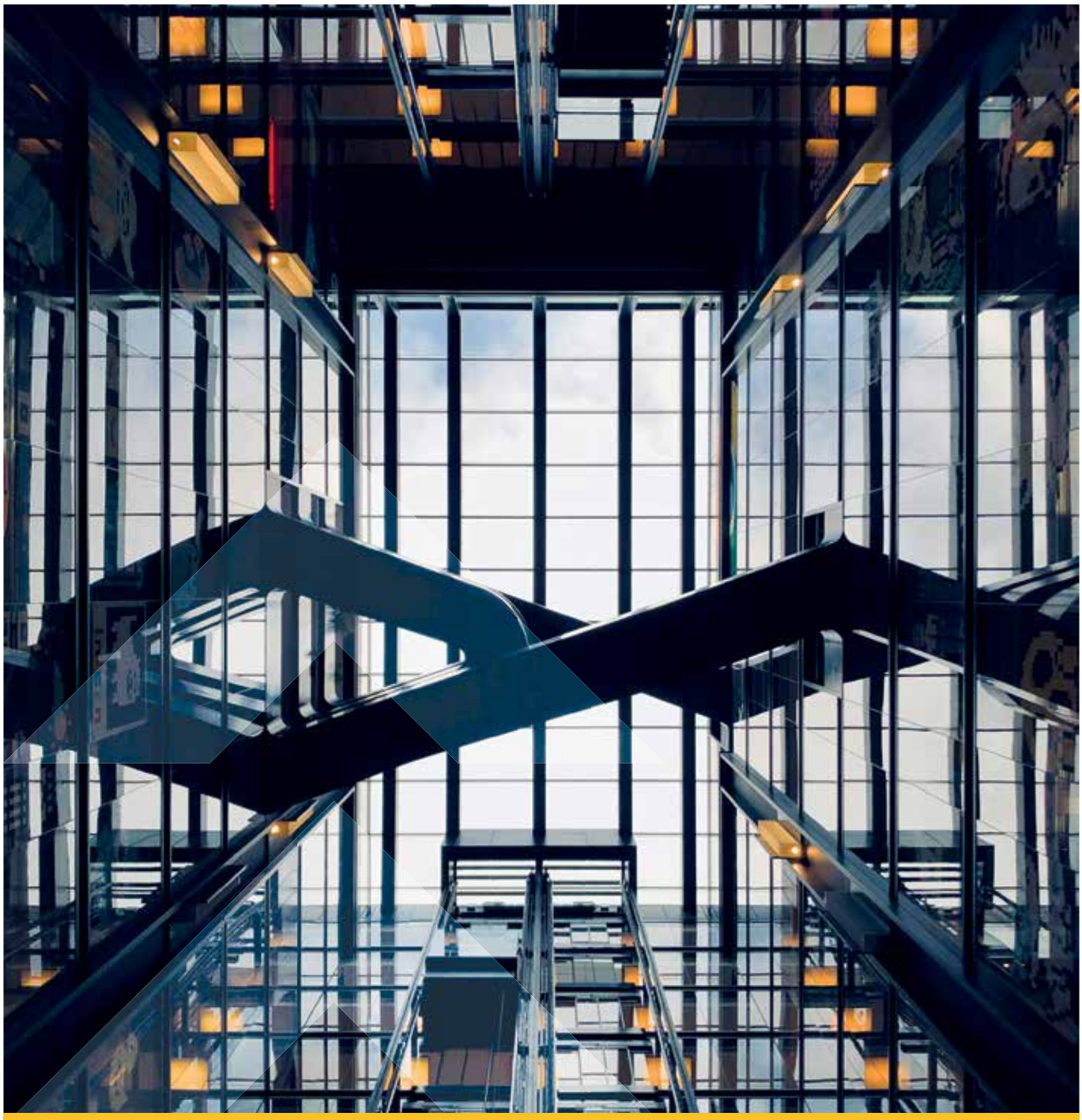
lift Industry News

A UK-BASED MAGAZINE WITH A GLOBAL OUTLOOK FOR THE LIFT AND ESCALATOR INDUSTRY



NEWS » VIEWS » PEOPLE » SAFETY » TRAINING » STUDY

Agile

Whether we manufacture a product in-house or source it from a supply partner, our attention remains on the little things that make the biggest difference. As a business, we move seamlessly between engineering, design, development, production, and tech support. That's what agility looks like.

ILE

International Lift Equipment
0208 527 9669
ilegroup.co.uk

CP Automation
Keeping industry
in motion

CONTROLLING MOTION IN ELEVATOR APPLICATIONS

Providing turnkey support for the UK's elevator industry.

CP Automation is a trusted partner of independent controller manufacturers globally, supplying elevator-specific AC and DC motor control solutions for new lift and modernisation projects.

In addition we supply a range of specialised services, including:

- **Pre- and post-modernisation energy consumption measurement**
- **UPS planned preventative maintenance (PPM) visits and annual service contracts**
- **UPS planned preventative maintenance (PPM) visits and annual service contracts**
- **Supply and fit of drive upgrades/replacements**

This is combined with our decades of expertise in the vertical transportation industry.

That's why CP Automation is a reliable, trusted partner for:

MAGNETEK YASKAWA REVCON Optimizing your drive! CRESSALL CONTROL TECHNIQUES

Visit our new website to find out more:
www.cpaltd.net

+44 (0)1234 349191
sales@cpaltd.net

Lift Training Lab

Bridge House, Station Approach, Great Missenden, Bucks, HP16 9AZ, UK

Featuring

- Large conference room with air-conditioning and natural light
- Adjoining kitchen and breakout space
- Use of hydraulic & MRL lifts including access to shaft and machine room
- Fully equipped to run hybrid events with in-person and remote delegates
- All standard conference room facilities including high-speed internet, large flat screen, and refreshments
- Run your own courses or request a trainer

Location

Bridge House is situated in Great Missenden, 38 miles northwest of Central London. The building is directly opposite Great Missenden train station (London Marylebone 45 minutes). The A413 is within a few hundred yards and provides excellent access to the M40 and M25.

Costs

Use of conference room and kitchen/breakout space, full day, 08:00 to 18:00	£275.00
Use of conference room and kitchen/breakout space, half day, 08:00 to 12:30 or 13:30 to 18:00	£175.00
Hybrid events, via Zoom/Teams or live streamed on YouTube (half or full day)	Add £295.00
Use of hydraulic & MRL lifts	Add £495.00

Complimentary tea, coffee, milk & sugar, chilled water.
Lunch can be ordered in and will be charged at cost.

Our hydraulic and MRL lifts are also available separately for R&D projects, please contact us for more information.

WISH TO HIRE WITH US »

Contact:
office@peters-research.com
or telephone 01494 717821

lift Industry News

UK-BASED MAGAZINE WITH A GLOBAL OUTLOOK FOR THE LIFT AND ESCALATOR INDUSTRY

Editor: Patricia Reading

Content Advisor: Dave Cooper

Copy Editor/Writer: LJ Stocks

Graphic Design: Sonia Hall

Social Media: Emma Mackley

Lift Industry News is a quarterly magazine owned and operated by Peters Research Ltd.
Cover photo by Patrick Robert Doyle on Unsplash.

Subscription information can be found at *www.liftindustrynews.com*

hello@liftindustrynews.com

lift Industry News

PUBLISHED QUARTERLY, PRINT AND DIGITAL VERSIONS

ADVERTISE »
www.liftindustrynews.com/advertise
Email: *hello@liftindustrynews.com*

SUBMIT AN ARTICLE TO »
www.liftindustrynews.com/submit
Email: *hello@liftindustrynews.com*

SUBSCRIBE TO »
www.liftindustrynews.com/subscribe

Advertise with us for Issue 10, October 2024

Special discounts are available to regular advertisers by taking up one of our discounted package deals - please ask for details.

Actively supporting the UK lift and escalator industry

Get To The Bottom of Your Responsibilities According to Lift Legislation and Key Industry Guidance

We're working with our lift industry partners **Rise Compliance**, leveraging over **25+ Years of experience** with lift maintenance, repairs and installation.

Delivering training for:

- **Authorised Person Lifts HTM 08-02***
- **Trapped Passenger Lift Release**

Designed to provide clarity on:

- UK Government Regulations (Lift Regulations 2016)
- NHS England Guidance (HTM 08-02)
- HSE Regulations (PUWER & LOLER)
- European and British Standards (EN81 & BS7255)

Course dates available throughout 2024!
* Refresher training also available

York, Slough, Livingston and On-site at your premises

pltraining | RISE COMPLIANCE
INSPECT · TRAIN · INSPIRE

0333 121 0381 << Call our team today

lifts@ppltraining.co.uk go.ppltraining.co.uk/lifts

Visit website

RORY SMITH
OVERVIEW

Welcome to the summer edition of Lift Industry News

Thank you for inviting me to be the Guest Editor for the 9th edition of Lift Industry News – and happy second birthday to the team and all the contributors & readers!

With over 55 years in the lift industry I have certainly seen a lot of change. The speed of progress with everything internet related and how IoT touches so many areas of the business we are all in is fascinating. Do read the two papers from the Lift & Escalator Symposium (LES) in the Knowledge Bank starting on page 46 covering two great interests in my life: IoT enhanced traffic analysis and the Global Dispatcher.

We expect many more fascinating insights into the future of the industry at the 15th LES, all the topics that will be presented are listed on page 39 - ten countries will be represented and I look forward to being there, meeting old friends and making new ones.

One old friend is Stuart Davidson, the MD at Lester Controls and he gives a great overview of his company and their projects on Page 25. The Voyager Destination Control System is a great example of technology making buildings smarter.

We also have an article on how important it is to choose the right SIM for your GSM, more smart technology that is getting faster and smaller every day.

Talking of smart (and small), the spokesdog for the Lift Industry Mental Health Charter has some thoughts on technology and how it affects all our lives, not always for the better - follow Ted's paw prints to page 69.

The 75 intrepid climbers that took on Snowdon recently to raise awareness for mental health may have wondered how smart they were as they battled freezing temperatures – in July! But we lift & escalator people are a tough bunch and they battled through to raise flags on the top of the mountain.

Plus we look back at the rich history of Otis and where they are going next, have updates from LEIA on safe working on lifts, Dave Cooper sounds a warning about wiring regulations & safety, Hong Liang gives a fascinating insight into his journey from China to becoming a British Citizen and Michael Craddock from Shorts explains why Star Wars is important!

We also feature the Unsung Heroes of the Lift & Escalator Industry. We all know there are big names doing big things, however behind all that is an army of people doing amazing work. We salute you all!

I look forward to meeting many of you at the Lift & Escalator Symposium and debating the exciting future of our vibrant industry.

lift Industry News

CONTENTS

THIS QUARTER

THE INTERNET OF THINGS (IOT)

The Internet of Things (IoT) is changing the way buildings function. Smart buildings can deliver a whole host of benefits, optimising energy use, freeing up operational efficiency and environmental performance. For the lift and escalator industry there are a lot of applications.

Photo by Markus Spiske on Unsplash

PLUS TED TALKS TECH!

Technology comes in many forms, and even dogs can't escape tech today!

READ ONLINE »

www.liftindustrynews.com/read

Email: hello@liftindustrynews.com

SUBMIT AN ARTICLE TO »

www.liftindustrynews.com/submit

Email: hello@liftindustrynews.com

lift Industry News

CALENDAR 2024

September 16 - 18

The Elevator Show
September 16-18

DUBAI, UAE

October 01 - 03

LiftExpo Poland
October 1-3

WARSAW, POLAND

November 13 - 14

Build2Perform
November 13-14

LONDON, UK

September 18 - 19

Lift & Escalator Symposium (LES)
September 18-19

KETTERING, UK

October 28 - 30

Lift City Expo Saudi
October 28-30

RIYADH, SAUDI ARABIA

December 04 - 06

Lift Expo Italia
December 4-6

MILAN, ITALY

September 23 - 27

CTBUH International Conference 2024
October 23-27

LONDON, UK & PARIS, FRANCE

November 06

Elevator Forum (Manchester)
November 6

MANCHESTER, UK

December 05 - 07

International Sourcing Exposition for Elevators and Escalators
December 5-7

MUMBAI, INDIA

October 01 - 02

E2 Forum
October 1-2

FRANKFURT, GERMANY

November 12

Nordic Lift Expo
November 12

STOCKHOLM, SWEDEN

December 06

Elevator Forum (London)
December 6

LONDON, UK

/2025

February 06 - 08

Lift City Expo 2025
February 6-8

CAIRO, EGYPT

November 19 - 21

GEE Global Elevator
November 19-21

MILAN, ITALY

May 15 - 18

Asansör
May 15-18

ISTANBUL, TURKEY

June 11 - 12

LIFTEX
June 11-12

LONDON, UK

October 14 - 17

Interlift
October 14-17

NUREMBERG, GERMANY

LES 2024

The 15th Lift & Escalator Symposium this year is at the Kettering Park Hotel & Spa. You can see all the topics that will be covered in the Knowledge Bank on page 40. Alongside the conference programme, you can meet a host of exhibitors demonstrating the latest products and solutions. The 2024 Exhibitors are: CP Automation, Digital Advanced Control, DSW Solutions, Lester Controls, University of Northampton, Avire, SLS Sassi, Thames Valley Controls and Dewhurst. Limited places still available: ***https://www.liftsymposium.org/***

LIFTEX 2025

Now in its 37th year, LIFTEX is the UK's only dedicated exhibition for the lift, escalator and access industry and takes place only once every three years. The 2022 event saw a 22% increase in attendance, attracting 4,000 attendees – the biggest yet - with over 100 exhibitors from 12 countries, including the UK, Croatia, Germany, Italy, Spain, Sweden, Switzerland and the USA. LIFTEX features an exhibition of over 100 suppliers, alongside a programme of free seminars. Hosted by industry experts, sessions will cover topics such as safety, evacuation, modernisation and the latest standards and regulations.

What does The Internet of Things and Artificial Intelligence bring to the world of Vertical Transportation?

POINT OF VIEW

by Len Halsey

There is no doubt that in today's world we are being told that Artificial Intelligence (AI) is the driving force behind technical innovation. The concept is pushed hard in advertising, with everything from mobile phones and computers to business systems and cars, all claiming to use AI as a means of enhancing the user experience: but what exactly is AI?

The first thing to say is that AI isn't new, it has been around as a concept for a very long time. Alan Turing, he of Enigma code breaking fame, first posed the question as to whether machines are capable of learning and making decisions. This has been a subject that has exercised minds since the 1950's and while it fell into the background for a number of years it has moved to the forefront of technical thinking and innovation over the past 10 to 15 years. As computers have become more powerful and the sophistication of algorithms more refined, there is little question that AI will be a dominant force in the development of technology, and while the ethics are debated, its application will have a profound impact on all of our lives. AI is about the ability of computers to replicate human thinking and intelligence.

Alongside AI we have the Internet of Things (IoT). This differs from AI in that it seeks the ability to connect systems and devices in real time, collecting and processing data to provide outputs which drive decision making. As with AI the IoT has huge implications for the way we interface to technology and the way technology seeks to provide us with information. The IoT informs decision making and has the ability to improve performance and productivity.

While both AI and IoT are different things, when seen as a collective means of changing thinking and decision making, they will bring about unprecedented change to the way we humans interface to, and use technology.

Clearly both concepts have the ability to provide change in many areas across the landscape of technology. They will be huge influences in our lives and the way services are delivered, not to mention the information we will be provided with to make decisions. Obviously, a vast subject but when looking at the VT industry, and the way buildings are used, we can start to look at a few aspects of what this might mean at a practical level.

The impact of AI and IoT on the VT industry

The concept of 'intelligent buildings' has been with us for many years. The ability to have lighting that only comes on when people are present, and HVAC that is automatically adjusted to actual need as opposed to running irrespective of load, are two examples of where some form of intelligence has sought to improve efficiency. As we know, significant strides are being made to allow AI and the IoT to manage buildings better, and more efficiently, with the integration of BMS systems to other services such as security, lifts and MEP. More on this a little later.

In lift terms, AI was marketed as an enhanced means of group control going back to the 1980's. The sales pitch was that the lift system would 'learn the building' and provide a better service by positioning lifts where demand was going to be greatest and thus reduce waiting times. I was never sold on this approach, given the technology of the day, and the fact that the design of group control had evolved around conventional control systems.

The ability to gather data and identify repeat patterns of usage to predict future demand was a step too far for the computing power of the time, especially in a dynamic environment of a busy building where usage patterns vary day to day for many reasons.

However, things are very different now. The wider use of destination systems, dynamic call allocation and increased computing power provides a platform for both AI and the IoT to make a significant difference. The question in my mind is where do these technologies fit and how will they be applied? From my perspective I see two distinct areas where their application can bring significant benefits.

Harnessing the potential of AI

Firstly, AI has huge potential to do what was tried years ago - bring improved efficiency to the way lift systems respond to demand. By collecting data, looking for usage patterns and making decisions in areas of call allocation, smart systems will be able to better predict demand and allocate the necessary resource. This type of feature is already available of course, but with a more refined and dynamic assessment of usage it can be optimised and implemented more efficiently, bringing with it the benefits of improved performance and power saving.

Secondly, while AI has the ability to maximise service delivery, the IoT has the ability to provide significant amounts of data on usage patterns and plays a major role in remote monitoring, maintenance and passenger communication. Remote monitoring, like AI, has been around for a very long time, going back to the days of relay systems in the 1970/80's. Albeit the remote monitoring systems of those days had limited capacity, they did monitor key operational components for signs of deteriorating performance and wear.

The information was relayed back to a service centre and used to aid preventative maintenance and reduce breakdowns. This was sold as reducing down time and providing customers with a more reliable service.

In addition, the IoT offers the scope to monitor a much wider spectrum of components and operating devices. It can provide real time data on the overall performance of the lifts as well as the group system and its operating efficiency. This obviously brings benefits to both the service provider and client, providing early warning of potential failure, reducing down time and improving safety. The question here is; do you seek to apply this new technology to existing lifts or wait until the lifts are modernised? Something for the marketing department to perhaps ponder?

As we know, the one constraint on the ability to meet demand is that lift systems have a finite capacity in terms of service delivery. The number of lifts, capacity and speed dictate what can be provided and it is here that AI can have the ability to maximise efficiency and get the best out of what the system can deliver. For many years control systems have been refined on the basis of working smarter; the introduction of zoning, destination control, refined call allocation, faster and bigger computing power, etc. We now appear to have reached the point where the law of diminishing returns applies, significantly increased computing power and smarter systems bring disproportionally small improvements in performance, and this is where AI can provide the step change necessary to improve performance.

One major benefit of this wider and more flexible means of optimising efficiency is in the provision of information to users. I must admit to something of an issue with the 25 to 30 second average waiting time for lifts.

If you are prepared to wait 15 minutes for a train, 5 minutes for your morning latte, why do you expect a lift in 30 seconds? Part of the answer I believe is in the fact that in waiting for the train and coffee you have information which psychologically allows you to accept the situation, and although you may not be happy with the wait, you can monitor progress.

With lifts it is different, you place a call and are told to go to lift A. There you wait with no information as to when the lift will arrive (hall position indicators are rarely provided these days). However, if the IoT could communicate with your phone, which could be used to place a call, a notification that your lift will arrive in 45 seconds would, I'm sure, satisfy most people; they have information. And the information flow to users doesn't have to stop there. The quest to improve the user experience can be enhanced by personalising in car or phone messaging during the journey or telling you the lights, heating and kettle have been put on in your apartment and the TV is tuned to your favourite channel!

While we have been discussing the seemingly endless opportunities for lifts, we have to remember they are only one part of any building services. The ability to have fully integrated building management systems in which the whole building is monitored, with all services optimised to meet demand and levels of occupancy has to be the objective. There is little question that both AI and the IoT have the ability to change not only how buildings are used, but how they are managed on a sustainable and efficient basis.

When looking at the potential for such drastic change, one question that jumps to mind is: how does the application of AI and the IoT impact on the future design of VT systems? Set against a background of changing work patterns and building use, are the criteria we use today still valid for tomorrow's world? My view is that it is perhaps too early to say. The new technologies will take time to develop and implement, but change is certainly coming. From an investment standpoint it would take a brave developer to make significant changes in service requirements for offices or residential buildings at this stage, I would suggest it is a question of wait and see how things move over the next few years.

The IoT and AI are technologies we will seek to develop in order to maximise their potential for improved performance and reliability. The benefits will be significant and how our industry adapts to manage these changes will be interesting to observe.

In the meantime, the next big question is: can AI and the IoT be used to develop the means of robotically installing lifts?

BIOGRAPHY

Len spent a major part of his career with Otis, holding senior technical and managerial positions in construction, modernisation and major projects before joining Canary Wharf Contractors in 1998. Working with vertical transportation contractors, consultants and interface trades Len was responsible for lift and escalator installations on major high rise developments before being appointed Vertical Transportation Design Manager in 2002.

Working with signature architects and major international VT consultancies, Len worked providing design solutions in complex high rise buildings and across the developments portfolio, including infrastructure, retail, residential and public transport projects. He was appointed Project Executive for Vertical Transportation Systems in 2015 and fully retired from Canary Wharf in 2023. He is now an independent consultant.

He is a former chair of the CIBSE Lifts Group

lecs uk

The Lift & Escalator Consultancy

Lifts | Escalators | Moving walks | Façade access equipment
Funiculars | Cable cars | Lifting Platforms

From concept to commissioning and beyond - experience the expertise of LECS UK's leading independent lift and escalator consultants.

From high-performance buildings to residential homes; complex urban transport systems to commercial developments, we advise, plan and manage all vertical transport projects from design concept right through to compliance, commissioning and maintenance management.

Modular services also include:
Portfolio management | specifications | maintenance | surveys | traffic analysis | commissioning | tender and contract administration | statutory inspections | expert witness

Innovative Thinking | Independent Advice | Superior Project Management

GET IN TOUCH TODAY FOR INDEPENDENT SPECIALIST ADVICE FROM THE EXPERTS

LONDON | MANCHESTER | EASTBOURNE

t: 0203 6272247 e: info@lecsukco.uk w: www.lecsuk.co.uk

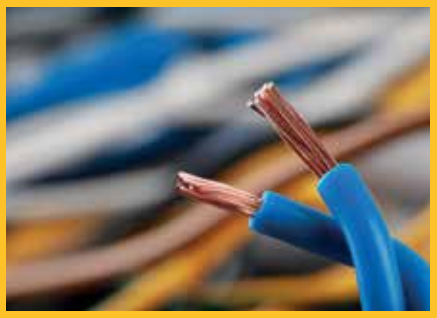
SAFETY FIRST

Dave Cooper, our expert adviser looks at

THE HISTORY OF THE WIRING REGULATIONS AND SAFETY

It only takes an innocent change in conduit and/ or trunking and the circuit protective conductor situation can also change. I will come round to this again towards the end of this column but I wanted to achieve two things with this article.

Firstly I wanted to remember the anniversary of our industry's loss of a great lady. Dr Gina Barney was lost to us on 6th July 2023. This article is dedicated to her and her devotion to our industry. The reason I chose this subject matter for such an article is the fact that Gina steadfastly refused to use the post nominals FIET and held onto the FIEE instead. As a Fellow of the Institution of Electrical Engineers she did not believe in the Institution becoming wider rather than deeper in its subject matter.



Secondly, I wanted to transmit the importance of standards. Again, without Gina many of our standards would have not progressed at the speed they did and for that we owe her so much.

So let's have a look at some electrical history.

Many older readers, myself included, were brought up on the 14th and 15th editions of the IEE Regulations and whilst the IEE Regulations (now BS7671) have changed there are still many old installations out there.

A brief history can be found on Wikipedia.

The innovation during my early years was the introduction of earthing in lighting circuits. There had been a number of accidents pre 14th edition where people changing lamps in light fittings had received electric shocks. I imagine that the original theory was that a light fitting was out of reach but if you stand on a ladder that provides a route to earth whilst changing a lamp on a fitting that has become live you become part of the circuit. Ouch!

The Wiring Regulations have changed inconceivably since the First Edition was published on 11 May 1882. It's important to remember, at that time, most houses were illuminated by candle or gaslight and were heated with coal fires. Following several accidents involving industrial and domestic electrical installations, the late 1800s saw the introduction of several wiring standards. In response to this, the IEE Wiring Regulations were borne out of a committee appointed by the Council of the Society of Telegraph Engineers (a predecessor of the IEE and the IET) in May 1882.

The committee was charged to investigate fires arising from poor electrical lighting installations and to devise some preventative rules to be adopted by the electrical engineering industry at large.

The newly outlined rules were presented to the Council in June 1882, following just six weeks of investigation, and were universally adopted by the Society, being published in the STE's journal.

There were 19 rules in total in the first edition, five of which were concerned with dynamo.

Today a set of rules, enforced by law, for the safety of electrical installation sounds absolutely necessary, in the late 1800s they were not embraced by the electrical engineering community. Fire insurance offices and consulting engineers preferred their own set of rules. By 1899 there were at least 26 sets of rules in existence.

Phoenix Fire Office published a report in February 1882 by Musgrave Heaphy which included the first set of rules for electric wiring included as an appendix. Musgrave Heaphy was elected a member of the STE in 1886.

Before the third edition was published in 1897 the IEE tried to gain acceptance from the insurers but with little success. Electrical contractors complained about the variety of rules they had to work with – for example when wiring a house the contractor needed to know about the supply undertaking and their set of rules plus the householder's insurance company and their set of rules! The main problem was that insurance companies did not recognise the authority of the IEE. In 1897 the IEE's third edition was published with the title changed to 'General Rules recommended for Wiring for the Supply of Electrical Energy'.

In the years before the First World War, however, the Institution grew in stature and attitudes gradually changed. By the time of the 7th edition of the IEE Wiring Regulations (as the rules had then become known) published in 1916, over 50 insurers had adopted the regulations as standard. Over the years the Regulations evolved to incorporate new developments in electrical installations and fittings such as the introduction of the fused 13A plug in the 12th edition (1950).

In October 1992 The British Standards Institution (BSI) and the IEE signed an agreement which made the 16th edition of the IEE Wiring Regulations into British Standard 7671 (BS 7671: 1992 'Requirements for electrical installations').

Since 1992 the IEE (and now the IET) have worked together with the BSI to produce further editions of the Regulations, under the joint technical committee JPEL/64.

In 2004, BS 7671 was amended to incorporate the requirements of CENELEC Standard HD 384.5.514: Identification of conductors. This meant that the traditional colour identification for conductors changed in the UK.

In 2005 the Government introduced Part P of the Building Regulations entitled 'Design and installation of electrical installations'.

Part P states that anyone responsible for electrical design or installation work in a home, must make reasonable provisions to protect the persons operating, maintaining or altering the installation from fire or injury.

In 2011 the 17th Edition included the maximum earth fault loop impedance values being revised to account of the change in nominal voltage, from 240 V to 230 V.

In 2015 the 17th edition of BS 7671 saw some major changes from previous editions.

The latest edition of the IET Wiring Regulations Eighteenth Edition BS 7671:2018 was published on 1 July 2018 and in In January 2020, Amendment 1 to BS 7671:2018 was published. It contained amendments to Section 722 for electric vehicle charging only.

So, I started out by saying that an innocent change in conduit and/or trunking could cause a change in the circuit protective conductor situation. Back in my day we were allowed to use the conduit and trunking as an earth conductor (obviously most installations have gone over to plastic these days so it couldn't happen now) but all it needed was a break in the conduit or a bit being taken out and a plastic section being put in to break the route to earth.

The moral of the story. You can't check earth continuity enough and that is why it is in SAFED LG1 4.1 as a supplementary test.

REFERENCES

https://www.theiet.org/membership/library-and-archives/the-iet-archives/iet-history/iet-150-our-stories/a-brief-history-of-the-wiring-regulations

BIOGRAPHY

EurIng Prof. David Cooper MBE, *BSc (Hons), MSc, MPhil, CEng, FIET, FCIBSE, FIMechE, FSOE, FCGI, is the CEO of consultants LECS (UK) Ltd. With 44 years' experience he is a well-known author and speaker, an Honorary Visiting Professor at The University of Northampton and is Vice President of CIBSE. He chairs both the UK's Lift Industry Charity and the Charity that runs the Lift Symposium. In 2021 he received the Sir Moir Lockhead Award for 30 years dedication to safety in the industry and*

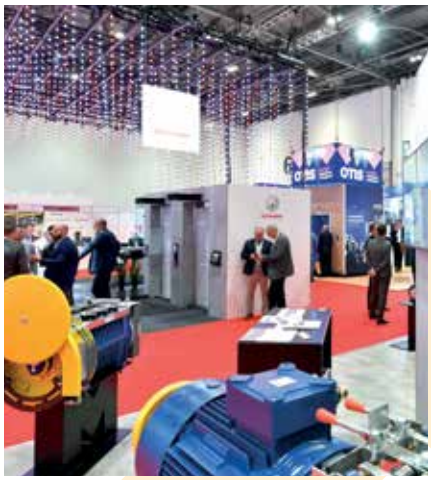
BEHIND THE SCENES AT LEIA

LEIA Member seminars:

LEIA Safety Seminar - 26th September

LEIA Technical Seminar - 23rd October

Date for your diary
The cut off date for LEIA distance learning is **15th August**.



LIFTEX 2025

– COUNTDOWN BEGINS

Oliver Greening, LIFTEX Show Director

The one-year countdown to LIFTEX 2025 is now officially on! The great news is that only a few stands remain (at the time of going to print). It's a position we've never been in before this far out from the show. It's encouraging to see the industry's appetite and we have already had to extend the floorplan twice to accommodate the demand.

Another trend we've noticed is the increase in overall stand sizes, compared to previous years. Exhibitors are telling us they plan to go bigger and better than ever before with their brand presence.

Our attention is now on the educational programme focusing on the Buildings Safety Act, modernisation, evacuation and the latest standards. We'll keep you posted, but make sure you follow the show on LinkedIn and/or Twitter for updates (search for LIFTEX Show).

LEIA Assessment

Karen Slade, Head of End-Point Assessment

After what feels like years in the making (probably quite literally) we have apprentices in EPA for all three standards we offer. The LEIA EPAO is set to provide EPA with three times the number of assessments in 2024 than in 2023. We're also pleased to be working with some exciting new training providers and employers.

The ST0252 Lift and Escalator Electromechanic has seen increased numbers of apprentices finishing their apprenticeship and heading through the gateway for EPA.
The ST0872 Lifting Equipment Technician welcomed the first cohort of apprentices who completed their practical assessments at the LEEA (Lifting Equipment Engineers Association) Training Centre. This is the first opportunity LEIA has had to offer a practical assessment and we have been pleased with the results and must extend our gratitude to LEEA for hosting our apprentices.

The ST0252 Stairlift, Platform Lift and Service Lift Electromechanic also welcomed their first cohort of apprentices in May. Keep an eye out in our next update for more on this!

LEIA Seminar

Nick Mellor, MD at LEIA

BS 7255:2923 Safe working on lifts - LEIA Seminar

At the time of writing, it is six months since the publication of *BS 7255:2023 Safe working on lifts – Code of practice*. A new BS 7255 is hugely important to the sector and so LEIA held a seminar for its members and is collaborating with others in the sector such as the CIBSE Lifts Group, INITA, SOE to hold further sessions.

The recent LEIA Seminar opened with Jamie Davies from the HSE providing background to the need for the revision and emphasising the status of BS 7255 for the HSE. The new revision includes points learned from accidents and incidents, incorporates developments in standards such as a new BS EN 81-20, and other developments since the last revision in 2012.

Much of the text of the new revision has been reorganised into:

Clause 4 *Core principles supporting safe working on lifts* which contains much new and revised content including some major changes:

- 4.1 Owner's safety survey - owners should have pre-BS EN 81-20 lifts surveyed using BS EN 81-80 to identify safety improvements.
- 4.4 Owner's documentation – owners should retain and share documentation provided with a new lift.
- 4.5 Reporting and exchange of information – owner, lift contractor and inspection body should provide and share reports.
- 4.6 Training and competence – includes a link to the LEIA website www.leia.co.uk/industry-qualifications for suitable qualifications, there is a new recommendation for Continuing Professional Development (CPD).

Clause 5 *Safety responsibilities of owners and persons working on lifts* has been restructured to include both owners and workers content with some important changes:

- 5.1.6 Removal of a lift from service with measures to be taken when someone working determines that the lift is in a dangerous condition.
- 5.1.7 Returning a lift to service with measures for testing a lift before returning it to service.
- 5.6 (and Annex D) on electrical working with more on precautions before working live and on the use of shorting links.
- Clauses 5.6.2, 5.7.1 and 5.9.1 list safety improvements for owners for electrical supplies, protective measures for working in the well, and protective measures for working in machinery spaces.
- Working within the lift well is revised and refers to new Annexes with procedures for accessing the car top and lift pit on a lift to BS EN 81-20. These procedures are not intended to override manufacturers' instructions or procedures derived by risk assessment. They are intended to provide examples to help develop procedures for lifts not to BS EN 81-20.

This list is not exhaustive – there are many other changes in the restructured standard so a complete reading is recommended.

The new BS 7255 is a major step forward. Owners are recommended to:

- Have safety surveys carried out on their lifts and to implement safety recommendations.
- Review their arrangements for retaining, managing and sharing documentation.
- Use only competent people for any work activity.
- Review their agreements with those working on their lifts, including agreeing procedures for removing unsafe lifts from service.
- Review their risk assessments for their lifts.

Those working on lifts and employing people working on lifts should review procedures (carrying out a gap analysis against their current arrangements) and take action where needed including on:

- their agreements with lift owners
- or managing documentation, reporting arrangements, arrangements for releasing trapped passengers, and agreements with owners, including procedure for removing unsafe lift from service
- training and competence and CPD arrangements.

OTIS – A RIDE THROUGH HISTORY

Last year marked 170 years since the first sale of an elevator featuring Elisha Graves Otis' safety brake, which made the elevator a safe means for human transportation. This was a milestone in the history of Otis, and the start of the lift industry itself, sparking a transformative era for urban development and human mobility, redefining how cities expand up and how people navigate them.

A globally renowned name and the world's leader in the manufacture, installation and servicing of elevators and escalators, Otis has a rich history of innovation and progress.

BEGINNINGS

Elisha Otis invented the elevator safety brake after searching for a solution to safely move freight from floor to floor without risking lives or destroying cargo if the hoisting rope breaks. To showcase his design and encourage sales, Otis enlisted the help of renowned showman P.T. Barnum to reveal his invention in 1853 at the Crystal Palace Exhibition in New York, with Otis standing on an elevated platform lift and cutting the retaining rope. The safety brake immediately halted the descent.


UNION ELEVATOR WORKS

General Machinery Depot,

117 FRANKLIN STREET, NEW YORK,

E. G. OTIS, *Proprietor.*

OTIS' IMPROVED PLATFORM ELEVATORS

FOR STEAM, WATER, HAND, OR OTHER POWER.

SO CONSTRUCTED, THAT IF THE ROPE BREAKS,

THE PLATFORM CANNOT FALL.

THE SAFEST AND BEST MACHINES IN USE.

E. G. OTIS,

117 FRANKLIN ST.,

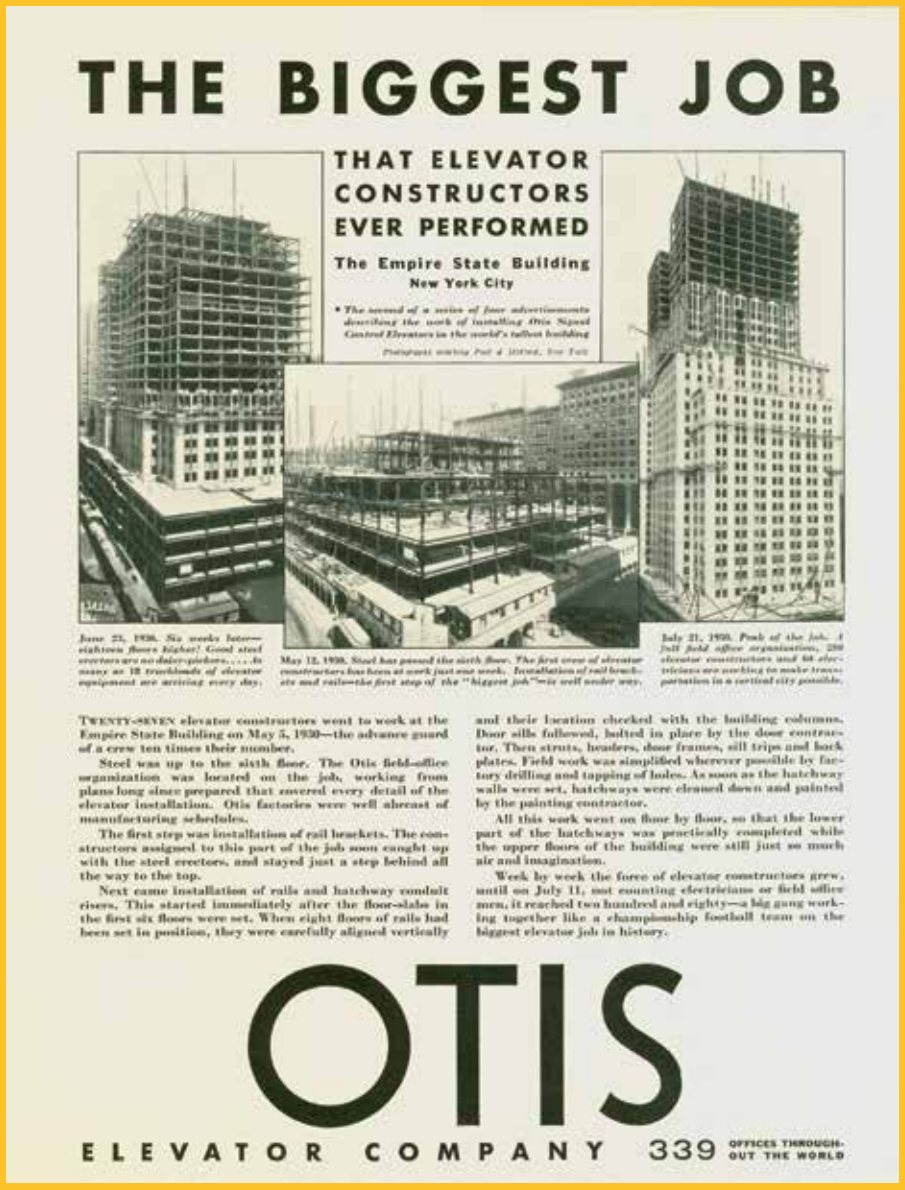
NEW YORK

In 1854, Otis sold eight freight elevators, followed by 15 more the next year. By 1857, the first Otis passenger elevator made its debut in New York City in the upscale E.V. Haughwout Building, a five-floor department store. The cast-iron building wasn't any taller than other New York buildings of the time. But Haughwout hoped that people would come to see this revolutionary technology – and stay around to shop. The department store opened on March 23 1857, a date now commemorated annually as World Elevator Day.

A WHISTLESTOP TOUR OF THE PAST

In 1861, Elisha Otis secured a patent, but he passed away just four months later. His sons, Charles, and Norton, took the reins, driving the company's progress. By the 1870s, the company was offering ornate passenger elevators and introduced a roped hydraulic elevator that achieved speeds of up to 244 metres per minute.

The 1880s brought prestigious contracts, including installations in the U.S. Capitol and the White House. Throughout the 1900s, Otis continued to innovate, developing an improved gearless traction machine that allowed previous height limits to be surpassed, enabling the construction of true skyscrapers. They also installed the first elevator in the Statue of Liberty and equipped the Empire State Building with 61 passenger elevators and six freight elevators, all featuring automatic controls.


THE BIGGEST JOB

THAT ELEVATOR CONSTRUCTORS EVER PERFORMED

The Empire State Building
New York City

* The second of a series of four advertisements describing the work of installing Otis Signal Control Elevators in the world's tallest building

Photograph courtesy Port of [illegible], New York

June 23, 1930. Six weeks later—eighteen floors higher! Good steel erectors are no daisy-pickers. . . . As many as 18 truckloads of elevator equipment are arriving every day.

May 12, 1930. Steel has passed the sixth floor. The first crew of elevator constructors has been at work just one week. Installation of rail brackets and rails—the first step of the "biggest job"—is well under way.

July 21, 1930. Peak of the job. A full field office organization, 250 elevator constructors and 60 electricians are working to make transportation in a vertical city possible.

TWENTY-SEVEN elevator constructors went to work at the Empire State Building on May 5, 1930—the advance guard of a crew ten times their number.

Steel was up to the sixth floor. The Otis field-office organization was located on the job, working from plans long since prepared that covered every detail of the elevator installation. Otis factories were well abreast of manufacturing schedules.

The first step was installation of rail brackets. The constructors assigned to this part of the job soon caught up with the steel erectors, and stayed just a step behind all the way to the top.

Next came installation of rails and hatchway conduit risers. This started immediately after the floor-slabs in the first six floors were set. When eight floors of rails had been set in position, they were carefully aligned vertically and their location checked with the building columns. Door sills followed, bolted in place by the door contractor. Then struts, headers, door frames, sill trips and lock plates. Field work was simplified wherever possible by factory drilling and tapping of holes. As soon as the hatchway walls were set, hatchways were cleaned down and painted by the painting contractor.

All this work went on floor by floor, so that the lower part of the hatchways was practically completed while the upper floors of the building were still just so much air and imagination.

Week by week the force of elevator constructors grew, until on July 11, not counting electricians or field office men, it reached two hundred and eighty—a big gang working together like a championship football team on the biggest elevator job in history.

OTIS

ELEVATOR COMPANY 339 OFFICES THROUGHOUT THE WORLD

BRANCHING OUT

Building on their early success in the United States, Otis expanded internationally. In 1888, they installed their first elevator in the luxurious Hong Kong Hotel. Their global accomplishments continued, including in 1910 an elevator at Chosun Bank in Seoul, Korea for transporting money in between floors, the first two escalators for London Transport at Earl's Court Station in 1911 and the installation of 72 hoisting machines for the emergency dams at the Panama Canal in 1914.

WAR AND POST WAR

During World War II, Otis used their expertise to manufacture ordnance, aircraft and ships, as well as their elevators. In 1948, Otis launched the Otis ElevoiceTM, with a prerecorded voice welcoming passengers. In 1948, the 37-floor Palmolive Building in Chicago became the first to pipe music into its elevators, working with the company Muzak, to distract passengers from 'building sway' with soft music.

INNOVATION

1950 saw the first high-speed, no operator elevator, the AutotronicTM. In 1979, Otis introduced the ElevonicTM 101 elevator, a system controlled by microprocessors. Developed with aerospace experts, it cut travel time by coordinating speed, position and direction with a building's traffic flow.

Some iconic buildings with Otis elevators and escalators

Picture 1
The Dubai skyline with the Burj Khalifa – the world's tallest structure. The tower includes 65 Otis elevators and eight Otis escalators. It features the fastest double-deck elevator, which travels 10 metres per second, or more than 20 mph.

Picture 2
Bund Centre, China

Picture 3
Bond St London Underground

PRESENT DAY

Always pushing for innovation, Otis continued to revolutionise the elevator industry in the 2000s with their Gen2® system, using long-lasting, steel-reinforced flexible flat belts instead of steel cables. In 2021, the Gen360™ launched, based on the Gen2 system, and incorporating the Otis ONE™ IoT digital platform for real-time monitoring and predictive maintenance.

Otis now moves 2.3 billion people (approximately a quarter of the eight billion people on the planet) every day and maintains approximately 2.3 million customer units worldwide – the industry's largest Service portfolio.

FIND OUT MORE:
https://www.otis.com/en/us/our-company/history

"We're all proud of Otis' incredibly rich history – and the world-changing impact we've had on safe vertical mobility for over 170 years," said Aleš Korotvička, Managing Director for the UK and Nordics.

"Otis has a remarkable legacy and a proven history of innovation built on anticipating customer needs that continues today with our future-ready Otis One™ Internet of Things service platform and Gen360™ connected elevators, for example. Everything we do is focused on our commitment to excellence in customer service and our operations, while honouring our Absolutes of Safety, Ethics and Quality.

"The world is increasingly becoming taller, faster and smarter – and I'm confident Otis will continue to play a vital role in shaping the future of urban mobility, whether that's providing new equipment, servicing the world's largest portfolio or modernizing equipment to extend a building's appeal for years to come."

A leading contact centre for the lift industry

Leveraging 20 years' of expertise, our 24/7 contact centre services provide unparalleled flexibility, scalability and resilience for your business.

- Call handling and email management
- Out-of-hours and daytime overflow coverage
- Utilisation and integration with client field service management software
- Efficient engineer dispatch and robust escalation processes

Experience working directly with your platforms:

Liftdata · clik · Microsoft Dynamics NAV · Protean Software · VERISAE

lemoncontactcentre.co.uk
0800 612 7595
24/7 and UK-based

Lemon Business Solutions Ltd, Unit 1, Lockheed Court, Preston Farm Business Park. Stockton-on-Tees, TS18 3SH

THE INTERVIEW

Renowned for their reliable, user-friendly lift control equipment, Lester Controls began life in 1984 with the introduction of a relay controller, followed by PLC-based microprocessor controllers. The launch of the highly successful MP500, a lift-specific microprocessor-based controller, saw their success grow further, with over 4500 MP500 installations. With exciting developments in the pipeline, we chatted with Managing Director Stuart Davidson.

What is Lester Controls best known for?

We are one of the most competitive and reliable controller systems in the UK. That might be a bold statement, but we're confident in our products and services.

Can you explain how your company vision affects the way you operate?

Our overarching company vision is to support the industry with excellence, providing great customer support from sales to completion. Our strapline, 'Elevating controller quality and performance,' incorporates our values to put safety first, always redefine reliability, champion innovation in vertical mobility, and ensure customer satisfaction in every project. Living and working by these values ensures that as a company, we are always striving for excellence, putting our people first, and providing a quality service you can rely on.

Tell me about some of Lester Controls' milestone achievements

We tend to celebrate little milestones which then add up to bigger steps in the grand scheme of things! Going from one controller to a group of controllers, developing from a basic controller to a microprocessor controller, and moving from old two-speed motors to variable frequency. Once you've achieved one advancement, you find you can tackle another, and it seems to snowball from there! Many of our developments are customer-driven - they ask us to develop products and support us through the process, which is challenging but also rewarding. When we've ventured into new fields, we've done it alongside our customers, working with them. It's like walking across stepping stones; when they grow, we grow with them, taking those steps together. We've never taken on something we're not fully confident we can do.

How do you empower your staff to deliver a quality service to your customers?

I encourage our team to treat our customers how they'd like to be treated themselves. I think that's vitally important. We also try to instill in them that every customer is important, regardless of the size of the project or spend. It's about having that level of professionalism and patience, dealing with our customers in a human way, with an understanding of their needs. The knowledge our teams have is incredible, and their skill in dealing with customers who want their problems solved quickly is amazing.

How do you work with your customers?

Every customer is important, but their requirements vary. We offer a bespoke service - no two controllers or systems are the same, and we have to be mindful of what each customer requires. Our approach is the same for every customer, and you have to remember that you only get out what you put in.

Being a supporter of the Lift Industry Mental Health Charter, what steps have you taken to support and promote good mental health?

We are incredibly sympathetic to any issues that are raised within the company. It can be hard to identify - if someone breaks a leg, it's easier to see and support, but with mental health, it requires more attention. We encourage our staff to be aware and empathetic, identifying and supporting where possible. This helps address and encourage individuals to seek help.

What's the newest or most exciting product you have developed?

A true collaboration with Dr. Richard Peters, our new Voyager Destination Control System has seen us take a significant step forward to develop an innovative dispatcher and lift controller. Combining our skills with Dr. Peters' expert knowledge, we have developed Voyager DC to streamline travel time by optimising routes for passengers. It also allows increased handling capacity with the system dynamically responding to fluctuating passenger demand, as well as offering a simplified connection process with an easy installation and simple setup. We're enthusiastic about this development and the improvements that Voyager DC will bring to the lift industry. We've completed two projects with the Voyager DC and are working on our third. We see this as the next technological advancement in the lift industry.

What are you doing to attract new talent to the company?

We have four apprentices at present - one started last year and three two years ago - who are all completing their apprenticeships at the end of this year. Apprenticeships are a major route forward for the future of the industry. It is rewarding to see fresh talent with drive and ambition flourish under our tutelage. We give our apprentices a chance to rotate through different departments to experience all that we do and gauge the areas they excel in and where their skills are best suited. They have excelled in their approach to learning about the equipment and service we offer, and we hope this will continue into the future for them and any other future apprentices.

What are your top priorities for the next 12 months?

We'd love to be closer to completing the development of a new processor - the next generation of lift controllers. This has somewhat taken a back seat during our finalisation of the Voyager DC. It's half the size, does twice as much, and is due for release in about 18 months. As a safety controller, it'll be a massive step forward which will involve an extreme amount of testing. In developing that, we're not entirely sure what it'll even look like yet! This time next year, I'll be able to show it to you and talk more about it.

I'd also like to push the company forward and expand the product range that we can offer to the industry in addition to our control systems. We'd love to branch out, so watch this space.

To find out more about the company, visit their website -

https://www.lestercontrols.co.uk/

NEW SOLUTIONS

NEW SOLUTIONS
NEW SOLUTIONS

VOYAGER DESTINATION CONTROL SYSTEM

A cutting-edge solution designed to optimize passenger flow and reduce wait times in busy buildings.

Featuring advanced algorithms and intuitive touchscreens, Voyager seamlessly directs passengers to the most efficient lift enhancing the overall user experience.

Ideal for high-traffic environments, this system not only improves efficiency but also adds a modern touch to your building's infrastructure.

GET A QUOTE

020 8288 0668

info@lestercontrols.co.uk

SAFETY FIRST & ALWAYS

RELIABILTY REDEFINED

Lester CONTROLS

ELEVATING CONTROLLER QUALITY & PERFORMANCE

VERTICAL MOBILITY INNOVATION

CUSTOMER DELIGHT

A LIFE IN THE DAY

In this issue of Lift Industry News we are celebrating some of our industry's unsung heroes.

ERKAN RESHAT - FUJITEC UK

STEVE LIZZIMORE - ILE

The dictionary definition: Unsung is used to describe people, things, or places that are not appreciated or praised, although you think they deserve to be.

Here are four superstars of the UK industry that definitely deserve to be appreciated and praised!

PETER KING - A&A ELECTRICAL

KENTON STANFORD - PIP LIFT SERVICE

FUJITEC

ERKAN RESHAT
FUJITEC UK

Imran Islam, Head of Strategic Growth at Fujitec had a lot of praise for his colleague who has been at Fujitec since July 2022.

Erkan has truly been the glue that holds our Service Field Team, Clients, and vendors together. He is an extremely likeable person and exudes his bubbly personality in his day to day activities.

Erkan's exceptional skills and dedication have made him an invaluable asset within our team. His ability to effectively communicate and coordinate with all stakeholders involved in our service operations has been instrumental in ensuring smooth and efficient service delivery. Erkan's attention to detail and organisational abilities have consistently exceeded expectations, allowing our team to meet and exceed customer satisfaction targets.

Furthermore, Erkan's commitment to continuous improvement and his eagerness to take on new challenges have made him a standout member of our team. He consistently demonstrates a strong work ethic and a genuine passion for his role, which is reflected in the high-quality service he provides. It is clear that Erkan possesses a remarkable potential for growth and development within our organisation.

Overall, Erkan's contributions as a Service Administrator have been exceptional, and he has consistently demonstrated his ability to go above and beyond in his role. His professionalism, attention to detail, and exceptional interpersonal skills make him an invaluable asset to our team. I have no doubt that Erkan will continue to thrive and achieve great success in his career.

ILE

STEVE LIZZIMORE
ILE

Steve is an experienced logistics professional at ILE, operating out of the company's Highams Park site. Steve is the key point of contact for managing the import and dispatch of GAL equipment, and a familiar name to customers and suppliers alike.

When Steve joined ILE in 1998, he quickly impressed the team with his extensive warehousing experience and great aptitude for taking on the challenges of the job. He was eager to develop in his role and was soon trained to manage the crucial processes around scheduling and dispatching GAL products.

ILE has been the exclusive UK distributor of GAL door equipment since 1984, and Steve has flourished in the responsibility of his role. Where GAL sales were initially limited to a small number of London and regional councils, demand has grown alongside Steve's great reputation.

Having now worked in his role for more than two decades, Steve has transformed the delivery of GAL into the UK. He has witnessed the conversion to the MOVFR door operator, car door locking, and - most recently - the versatile new Omni Operator. Customers rely on Steve's encyclopaedic knowledge of the GAL product range, and his hard work has significantly enhanced confidence in GAL and ILE within the UK market.

Offering expert advice, Steve will happily make amendments and additions to orders, always finding an answer for his customers. Working mainly on the phone, he rarely meets customers face-to-face – chances are you will have spoken to Steve and benefited from his diligent work without recognising him in his photo above!

When not at work, Steve plays darts (badly, he claims!), and enjoys socialising with his local friends, some of whom he has known since his school days. Together they enjoy horseracing and supporting West Ham.

Steve is an integral part of the team at ILE, and his energy and determination make him invaluable to his customers as well as all his colleagues.

PETER KING
A&A ELECTRICAL

Peter joined A&A Electrical at 18 years old and spent seven years working for the company before taking a lengthy journey through a range of other jobs. Gaining experience in sales for a car parts company, working as a mobile mechanic, setting up a new lifts division for an organisation and making 200 fence panels each day for a garden centre, Peter also turned his hand to scaffolding, managing a warehouse and driving a van for an electricals company before heading back to A&A Electrical as Trade Counter Manager in 2022.

Peter has a heart for the local community. Whether it's providing the elderly and vulnerable with free electrical services, or ensuring every child in the local primary school has a hi-vis jacket to keep them safe on school trips, Peter has enlisted the backing of A&A Electrical to support his community.

A group of vulnerable, lonely and elderly meet at the local community centre once a week, and Peter saw an opportunity to help these people with the small struggles of day-to-day life. Armed with a list of services, the group can call on Peter and his team of trusted electricians to provide anything from replacing light bulbs to fixing electrical issues, providing Peter with plenty of tea and cake in return!

His efforts to improve the world around him don't stop there. With the trade counter at A&A looking decidedly ordinary, Peter made it his mission to develop the area, introducing a more welcoming and professional style and showcasing products and solutions to prospective customers. Working with his team to transform the space and enhance customer engagement has resulted in an increase in business of around 31% over 12 months, with a 7% growth in profit.

Describing himself as honest, reliable and creative, Peter is continually thinking outside the box, looking for the next place he can use his talents and skills to make a difference. When he's not putting his creativity to good use, outside of work you'll find Peter at a track – car or motocross – feeding his need for speed along with his eight year old son. Or he'll be jetting off for a well-earned break with his fiancée, son and young daughter.

A dedicated and valued member of the team at A&A Electrical, Peter's integrity and determination to do good continue to fuel his journey at A&A.

PIP
LIFT SERVICES

KENTON STANFORD
PIP LIFT SERVICES

Kenton Stanford has worked at PIP Lift Services for 18 years, having completed an apprenticeship and NVQ prior to joining the company. Now a Senior Lift Technician, Kenton works across the country, enjoying the variety of the work as well as the strong culture of trust and support at PIP. Having been encouraged by his mentor, Chris Lambert, Kenton achieved his Level 4 NVQ, and credits his promotion to this encouragement from Chris to achieve his potential.

A true family-man, Kenton spends a lot of his time focused on his wife and children, supporting their hobbies of football and swimming, dreaming of returning one day to play rugby, as he did before the kids' hobbies took over!

Kenton's neighbourly spirit came to the fore recently, when a smoke alarm alerted him and his wife to a fire. Initially thinking it was their own, they soon realised it was coming from their neighbours next door, where two students lived. Knowing them well and having welcomed them into their own home, they were keen to make sure they were safe. However, having called the fire service, Kenton realised one resident had collapsed inside.

Crawling into the property, Kenton rescued the woman before the fire service arrived, saving her life, and receiving a well-deserved commendation for his selfless act.

An integral part of the team at PIP, they are incredibly proud of Kenton's noble deed. Empathetic, honest and hard-working, Kenton is an invaluable asset to PIP Lift Services. Whether he is ensuring the safety and efficiency of lift systems across the country or heroically stepping in to save a neighbour in need, Kenton embodies a continuing commitment to support others.

CHINA TO BRITAIN

From China to Britain: Fulfilling My Ancestral Calling

Hongliang Liang (梁弘谅) CEng FCIBSE from Aliang Lift Design Studio Ltd looks back at his dream to become a British citizen

"I was born British, but in the wrong place."

My journey to Great British soil was not easy, however looking back, my ancestors always felt a connection and calling to the UK, which I finally have been able to follow.

Mentored by Dr Cecil John Davenport (1863-1926), my grandfather became a talented ophthalmic surgeon, the only Chinese director at Lester Chinese hospital in the 1930s. Although never having set foot in the UK, my grandfather adored Great Britain, and spoke excellent English. Some of his best friends were English, and my grandmother, his wife, was an elder of the London Missionary Society (LMS) in Shanghai. During the Second World War, my grandparents helped their British friends who were sent to concentration camps by the Japanese, and after the war, the LMS promised to sponsor all three of my grandparents' sons to get them to the UK. Dr Davenport's son Dr Robert Davenport (1893-1961) also offered to sponsor my father to come to the UK to study medicine with him.

However, it was only my uncle that managed to make that journey, working in Manchester as a textile engineer before being reassigned to Brazil and then Canada. He reported meeting nearly 100 British friends of my grandparents, so great was the communication and connection between my grandparents in China and their friends in the UK.

My father, however, remained in China, graduating from the medical school of the prestigious St John's University in Shanghai. He struggled with his grades, and only graduated as the underground Communist Party had approached the school, requesting that more students be allowed to graduate due to the urgent need for talent in the impending new regime. After his graduation in 1952, he was sent to Jinxi County (currently Huludao) Liaoning Province in Northeast China, where he was sent to work in the Jinxi chemical plant staff hospital. Here he worked for 30 years, suffering political persecution for at least 20 years, labelled as a 'suspected spy'. Very westernised, my father was full of many stories of the world and made sure we had access to both domestic and foreign reading materials, including National Geographic magazines, which he ensured we had right up until he passed away in 2000.

Growing up and overcoming challenges

Living and education conditions were poor in Jinxi, and despite the huge amount of reading I did whilst growing up, I was affected by ADHD, and with a poor result at the end of primary school, my future looked certain to be that of a soldier or factory worker. However, on moving to Qingdao (Tsingtao) in Shandong Province, I developed the capability and motivation for self-learning, working hard to analyse and summarise concepts in my own way so I fully understood them. However, unable to pass the language test for university admission in the USA, I stayed in China, and although university admission in China was extremely competitive in the 1980s, I was successful in being accepted to the Nanjing Architectural and Civil Engineering Institute (Currently Nanjing University of Technology) in 1986.
It was here that I studied BEng Hoisting Transportation and Construction Machinery as my major subjects, taking a keen interest in a range of other topics, with a resolution to travel abroad. Before my fourth year, I had exhausted all the social sciences books in the library!

Gaining experience and grasping opportunity

After the Tiananmen Square massacre on June 4th 1989, where I had stood just days before, I was desperate to leave China, despairing of the country. This led me to work even harder to learn every skill I needed for a life in the western world. In 1990 I started my first job with Qingdao No.3 Civil Engineering Co, then gained experience elsewhere in electromechanical engineering, moving into other jobs to further enrich my expertise in vertical transportation.
In 1996, together with a friend, we created our own elevator company, which grew rapidly, becoming the second largest independent elevator supplier in Zhuhai.

In 2000, Chinese students were allowed to the UK without IELTS scores – those English language skills competency scores that had previously held me back. I immediately applied and received two offers for MSc courses, including an unconditional one. I arrived in London in April 2001, working hard to improve my English and my IELTS score, before starting at Huddersfield University in September 2002, studying an MSc course in Engineering Design and its Management. I worked hard, gained my degree with a 2:1 and came to realise that my way of thinking had always been British – critical thinking and first principle thinking, rather than analogical thinking only.

UK residency, citizenship and looking to the future

2008 saw me become a permanent UK resident, and in 2009, together with my family, I became a British citizen. Now, with over 27 years in the field of vertical transportation, 11 of those in the UK lift and escalator industry, I find myself with both an Incorporated Engineer accreditation with the Institute of Mechanical Engineers and a Charted Engineer accreditation with the Institute of Building Service Engineers. This experience has allowed me to build my own business – Aliang Lift Design Studio Ltd, offering solutions for any unique architectural or mechanical requirement that our clients have. I have had the opportunity to develop unique methods for vertical transportation in high rise residential towers and have published many articles and papers.

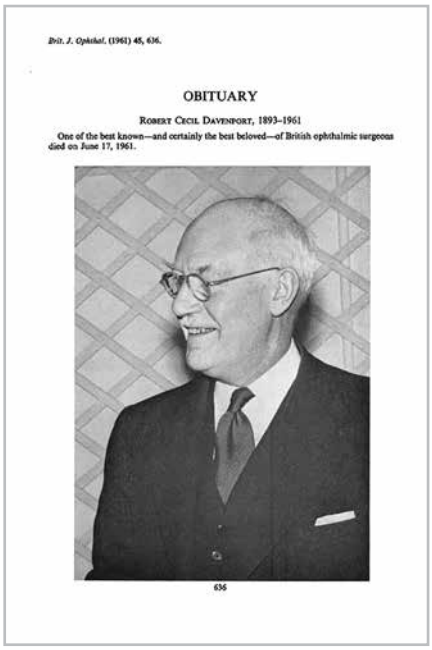
I think it is vital that we share knowledge and best practice, using the innovations of others to avoid disasters re-occurring and prevent them in the first place. For this reason, my work and designs are freely available, to be used by any VT consultants or professionals in their work.

My current research is looking at combining single deck lifts and double deck lifts to minimise the energy consumption, the equipment cost, the maintenance cost and the spaces taken. This feeds into my aspiration to continue studying the latest VT analysis theories, developing my own to make high rise buildings more effective and efficient.

Embracing freedom and honouring mentors

From being an independent personality with a free mind in China, I have also achieved a free personality with an independent mind in the UK. I am so grateful for my country which treats us so well, and grateful for my mentors in the UK, Professor John Fieldhouse, Mr. Adrian Godwin and Professor Dave Cooper, and also for my first boss in the UK, Mr Paul Baker. Just as Dr Cecil Davenport changed the life of my grandfather, these men have raised me up and changed my life.

I would very much like to pay tribute to Dr Cecil Davenport, should any reader know of his and Dr Robert Davenport's descendants, please do contact me via LinkedIn.



Brit. J. Ophthal. (1961) 45, 636.

OBITUARY

ROBERT CECIL DAVENPORT, 1893–1961

One of the best known—and certainly the best beloved—of British ophthalmic surgeons died on June 17, 1961.

636

THE MENTAL HEALTH CHARTER SNOWDON CHALLENGE

Trading lifts for hiking boots, a sunny weekend in July saw 20 companies and 75 walkers ready to tackle the 3000 feet of Yr Wyddfa for the Lift Industry Mental Health Charter. It was all about raising awareness for mental health and having a blast while they did it!

With many months in the planning the Snowdon event started in brilliant sunshine on the Friday, with happy campers. But on the day of the climb, the weather had taken a dramatic turn for the worse. The name "Snowdon" is first recorded in 1095 as Snawdune, and is derived from the Old English elements snaw and dun, meaning "snow hill" - and the mountain lived up to its name!.

It rained throughout the climb with conditions worsening as the teams approached the summit. With -2 temperatures, and ice on participants' caps, along with 30 mph winds, it become a challenge of strength and endurance, but the brave teams overcame! The way down was a different season, with the sun shining on smiling faces!

A big thank you to our sponsors:

Global1, J&L, Petrain services, Eze Lifts, Schnieder Lift Controls, Elevator Jobs, Husbands/Deltron

And massive congratulations to the 75 who took part!

Ascension Lift Solutions: Mark Harding
Allied Lift: Ian Newman & friends
Deltron: Jack Ford, Sam Hunt, Maddie Elwood
Eze Lifts: Tom Still, Ben Chalke, Emily Still, Martin Still
Fujitec: Kofi Ofori, Oliver Parish, Jade Munro, Yusuke Uchiyama, Erkan Reshat, Joe Hillier, Adam Bayes, Richard Jones
Global1Partners: Andrew Cresswell, Kelly Hughes, Jack Heffernan, Gareth Ellett, Hayley Rogers
Jackson Lift Group: David Oxley
J&L: Jessica McDonnell, Jon Forbes, Kevin Boyes, Sam Blythin
Marlin Lift Services: James Williams
Midland Lifts: Jim Halford, Alexa Halford, Mia Halford , Grayson Halford, Michael Devlin, Catlin Heffernan, Daniel Heffernan, Lucy Martin, Ross Patrick, Ben Hargrave, Gemma Hargrave, Harley Hargrave
Petrain Services: Petra Northwood, Katrina Attwood
PIP Lift Services: Chris Lambert, Kenton Stanford, Chris Coffey, Alex Walterman, Dave Walterman
RECLifts: Ben Marmon, Ryan Manning, Matt Scotchford, Sam Lewis, Jack Ford
Regal: Kevin Toomey
Robert Gerrard: Marcus Hill
Safeline: Jasmine Edwards, Jodie Cane, Kiri Austin-Hall
Target: Danny Keefe, Tony Howell-Smith, Paul Hewett, Ashley Chapman, Charlie Boden
TVLC: Trystan John, Lawrence John, Arlo John
Vertec Lifts: Tim Preston, Rachael Preston
Paul Halford - Retired

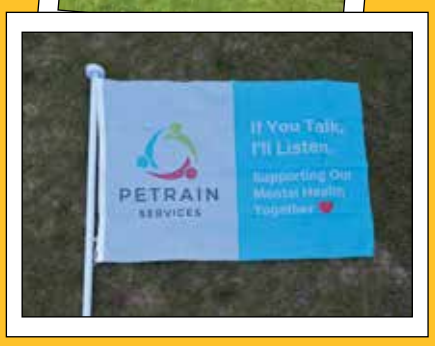
Please do donate here to support mental health in the industry:
https://www.justgiving.com/crowdfunding/mark-harding-1?utm_term=QWWmJNmNZ


1685m
tvc


ezelifts


Stronger Minds,
Brighter Futures
Invest in Mental Health


RECliffs


PETRAIN
SERVICES
If You Talk,
I'll Listen.
Supporting Our
Mental Health
Together

LIFT & ESCALATOR SYMPOSIUM

15TH SYMPOSIUM ON LIFT & ESCALATOR TECHNOLOGIES

18 - 19 September 2024

www.liftsymposium.org

University of Northampton

Lift and Escalator Industry Association LEIA

CIBSE Lifts Group

15TH LIFT & ESCALATOR SYMPOSIUM

The 15th Lift & Escalator Symposium takes place this year at a new venue, the Kettering Park Hotel & Spa from 18th-19th September. This year's programme will cover a wide range of topics, with ten countries being represented across the two days.

All the abstracts for this year are listed on the next pages.

A keynote presentation on Building Safety in the Lift Industry from Hywel Davies, former Chief Technical Officer CIBSE.

There have been significant developments in the building safety programme over the past year or so. We have new building regulations processes which apply to applications for approval of full plans, we have new competence requirements covering building work and a new regime for the management and recording of work in higher risk buildings.

We also have ongoing uncertainty about construction product regulation and the supporting standards infrastructure in both Europe and the UK. Hywel will attempt to navigate a path through all these changes and identify how they may be expected to affect the lift industry.

Highlights include:
This year's panel discussion, chaired by LEIA's Nick Mellor, will focus on the evacuation lifts as a means of escape, bring together an impressive panel of: Rachel Smalley, Head of Inclusive Design at Jacobs, Eoin O'Loughlin, Associate Fire Engineer at Arup, Hywel Davies, Matt Ryan, Director and fire safety consultant at Red Brick Fire Consulting Lift and Adam Scott, Technical Director (Vertical Transportation) at SWECO.

Alongside the conference programme, you can meet a host of exhibitors demonstrating the latest products and solutions.

The 2024 Exhibitors are:
CP Automation, Digital Advanced Control, DSW Solutions, Lester Controls, University of Northampton, Avire, SLS Sassi, Thames Valley Controls & Dewhurst .

Register today

Date: 18 - 19 September 2024
Where: Kettering Park Hotel & Spa, Kettering

www.liftsymposium.org

1. Using machine learning to estimate the traffic mix and intensity in a building.

Professor Lutfi Al-Sharif[1] [2], Dr Richard Peters[2], Matthew Appleby[2], Tahani Ghobon[1].

[1]Al Hussein Technical University, Jordan, [2]Peters Research Ltd, UK.

It has long been believed that the number of up stops and down stops in a building, as well as the ratio between them, could be used to estimate the mix of traffic prevailing in the building and its intensity.

With modern lift traffic analysis and data collection methods, it is now possible to generate large amounts of representative data in a reasonable time and with reasonable processing power.

This paper attempts to use the generated data as training and testing data for a machine learning application that could estimate the mix of traffic as well as the intensity of traffic in a building. The method will first be applied to one or more representative buildings and then extended to more general cases.

2. Blackout: Exposing the hidden risks of battery failure in lift passenger emergency systems.

Paul Burns, Osama Alshhoumi, Darren Lancaster & Paige Smith.

D2E International VT Consultants Ltd, UK.

Part of the authors' professional duties includes the regular condition and compliance auditing of 2,600 lifts across 20 diverse Client portfolios throughout the UK. Any fault or non-compliance found that represents a hazard to users or engineers is reported back to Client and Service Provider alike via Hazard and Incident (H&I) Reports. During 2023 the authors raised 573 H&I Reports, suggesting that at any one time around 20% of the portfolio demonstrated a safety or compliance issue.

Further scrutiny revealed that of those H&I Reports a startling 475 (83%) related to failures of emergency battery back-up power, with 262 (46%) directly relating to autodialler emergency communication failures. This data leads to the alarming hypothesis that 18% of this portfolio's emergency batteries will be ineffective at any given time, and 10% of autodiallers will be entirely inoperative during a mains power failure. This raises the frightening prospect of large numbers of lift users being potentially trapped in the dark with no means of communication.

This paper conducts detailed analysis of the dataset, identify the functions negatively affected by battery failures, commenting on the potential impact to users, and explores component and system designs that both aid and hinder effective charging, monitoring and replacement of battery systems.

The authors see this issue as a significant safety failing in the UK's (and potentially the global) vertical transportation industry. We are not content with merely highlighting this issue and will be championing an industry-wide campaign to address these safety-critical failings.

3. From a bell on a rope to VoIP: the evolution of the lift alarm in the UK.

Matthew Davies.

Memco (Avire Trading Ltd) , UK.

This paper will give the reader the opportunity to learn about the evolution of the design and provisioning of devices used by lift passengers to signal for help, 'alarm systems', in the UK from four perspectives:

1. Requirements in British Standards
2. Design approaches from both lift and component manufacturers
3. Experiences of industry personnel installing and maintaining alarm systems
4. Impact of the development of telecommunications systems in the UK

Research will be conducted by reviewing British Standards requirements back to at least 1935, online research into examples of early ad-hoc designs of lift alarm devices, interviews with experienced industry personnel to gain a first-hand perspective of how the installation & maintenance of alarm systems has changed, and a review of information available on the various designs of alarm systems introduced over the years. In additional to this research within the lift industry, the inclusion of interviews and further research into available sources within the

UK telecommunications industry will show the impact that changes in telecommunications technology have made both on the design and operation of lift alarm systems.

The result will not only be a summary of the development of requirements in British Standards and the design of alarm systems but will also demonstrate how the various changes over the years continue to inform certain industry behaviours and approaches today. The inclusion of research into the telecommunications industry will show that whilst many may, at times, see the UK lift industry as "an island", decisions made in other adjacent industries have impacted and will continue to impact the UK lift industry.

4. Knowledge transfer in distance learning.

Dr Thomas Ehrl.

The University of Northampton, Germany.

The paper outlines some of the issues around knowledge transfer of advanced dynamics of Passenger Transportation Systems in buildings and presents a concept for a distance study set-up for a multi-cultural/ multi-discipline R&D environment.

Advanced knowledge in regards to vibration control of lightweight cabins of modern Passenger Transportation Systems forms basis of a comprehensive research approach to find out, how this knowledge can be learned most effective and most efficient in a distance learning setting.

The impact of individual learning preferences and modern communication channels, such as Social Networking and Social Media, help to shape the novel concept for a distance learning setting for engineering staff of global engineering workforces.

The presented state-of-the-art knowledge transfer model clearly demonstrates the implication to the future concept design of enhanced learning courses in higher engineering education and has a game changing potential for appropriate and modern 21st century learning, which is especially of interest in pandemic and crisis times.

5. Theoretical evaluation of evacuation lift capacity.

Kristian Farr.

Sweco, UK.

Evacuation lift capacity assessments are a requirement of the London Plan Guidance which states buildings should "be designed to incorporate safe and dignified emergency evacuation for all building users".

Where designated in the approved Fire Strategy, lifts are able to be used for evacuation purposes and "a minimum of one lift per core, or more subject to capacity assessments" should be provided.

This paper proposes a theoretical methodology to assess the evacuation lift capacity for a 34 storey development in London, with the assessment required by the buildings Fire Strategy in line with the London Plan Guidance.

A phased evacuation strategy has been specified by the Fire Engineer and theoretical lift traffic analysis has been undertaken to estimate the total time to complete Phase 1 of the evacuation, for a series of fire floors throughout the building.

This report will highlight the agreed assumptions for the development, total evacuation times, and provide information regarding the minimum required space-take for passengers who require lifts for evacuation within the refuge space provided in the protected lobby.

This study serves as a benchmark for the building design and evacuation planning, emphasizing the importance of incorporating theoretical traffic analysis in the early stages of development to ensure safety and compliance with fire safety regulations.

6. Modernizing model lifts and the implications.

Micky Grover-White.

LEIA, UK.

Those undertaking modernisation of a lift should be competent with the understanding the lift is either installed to a standard at the time it was first placed into service or by way of a conformity assessment route under a notified body and where the lift is declared as a “model lift”. These model lifts are typically mass manufactured and are limited to the exact requirements that deviate them against the standard such as, the rated speed, the rated load, the travel or mass of an empty car.

Understanding the importance of these restrictions can often be daunting and difficult to gather the information on and by using a risk assessment is a good example to capture these details. However there can often be components that are related to the equipment that also needs reviewing which can have a detrimental effect on the overall modernisation and consequences after the lift has been placed back in to service.

This paper looks at the implications when modernising lifts which have been subject to a conformity assessment and accompanied with CE marking.

This paper also looks at the testing methods when modernising lifts and where the parameters of the lift are changed, and what testing requirements are required before placing the lift back into service.

7. The strength and design criteria for a lift guiding system revisited.

Professor Stefan Kaczmarczyk.

University of Northampton, UK.

Lift guides are subjected to variable loading conditions under loading, normal operation / running, and stopping (under the operation of the safety gear).

Safety codes demand that under these conditions the guiding system must be designed with adequate strength to withstand bending and buckling and impose limits on the permissible stresses and deflections. Furthermore, maintaining special ride quality requirements of a lift system might impose additional limits on guide deflections.

There have been extensive studies carried out to develop models that can provide adequately accurate results for stresses and deflections that must satisfy these conditions. For example, BS EN81-50 / 20:2020 specifications for guide rail bending deflections are based on a three-span beam model. On the other hand, the model for evaluation of the maximum bending moments is a single span beam with one end simply supported and the other end constrained as built-in (fixed).

The influence of various boundary conditions and the issue of selecting and providing accurate, practical models for pragmatic strength evaluation of a lift guiding system are discussed and appraised in the paper. These models can then be used as a starting point for evaluation of special ride quality requirements.

8. Design of a compact air conditioning unit for elevators using CFD and thermoelectric coolers.

G. Maliaris, M. Pappa, N. Michailidis, D. Stathokostopoulos, L. Malletzidou, F. Stergioudi, G. Vourlias & I. K. Sfampa.

KLEEMANN SA , Greece.

The design of an air conditioning device using computational fluid dynamics (CFD) is presented. Different constraints, such as limited installation area, efficient performance, short response time and noiseless operation, are considered. To overcome these constraints, instead of using a "traditional" heat pump, a more sophisticated principle was decided to be implemented, which is known as the Peltier effect. Using Thermo-Electric Coolers (TECs), it is possible to adjust the air temperature inside a cabin quickly and efficiently. The use of CFD software aims to determine the dimensions of the heat exchanger as well as the operational parameters such as cooling power and air velocity. The main aim is the construction of an elevator air conditioning system that is able to fit even in the smallest areas, and not being visible especially in cases, such as, a panoramic elevator. In parallel, the system should be efficient enough, compared to widely used air conditions, and energy saving.

* This research was carried out as part of the project «Design and implementation of innovative lift's air-conditioning systems by using thermoelectric devices» (Project code: KMP6-0074109) under the framework of the Action «Investment Plans of Innovation» of the Operational Program «Central Macedonia 2014 2020», that is co-funded by the European Regional Development Fund and Greece.

9. Unravelling destination control systems – a practical perspective.

TAK Mathews.

TAK Consulting Pvt. Ltd, India.

Destination control systems (DCS) were conceptualized over half a century back. However, it was not until the 1990's, that DCS made entry as a viable lift control and grouping solution.

Since then all major OEMs have developed their own proprietary solutions. Credible non-proprietary solutions too are available.

This paper will explore the author's working experience with destination control systems which began in 1998. The paper will address the validity of some of the claims, common implementation errors as well as issues related to DCS.

10. Study on the seismic response analysis of lifting ropes in the development of digital twin technology to reduce earthquake disasters in residential buildings.

Keisuke Minagawa, Satoshi Fujita & Takashi Matsushima

Saitama Institute of Technology, Japan.

The most common damage to a lift during an earthquake is the rope catching in an internal equipment and a bracket of a hoistway. The natural periods of a building and lift ropes in the building are usually close, causing resonance and a large response of the rope are induced.

As a result, the rope catching can lead to the confinement of passengers in a car and long-term suspension of lift operation, which has a significant impact on the daily lives of the occupants or residents. In order to reduce such damage, it is important to estimate the response of the rope by seismic response analysis in advance and to clarify the conditions under which the response of the rope does not increase. On the other hand, in the field of information technology, the so-called digital twin method has recently been applied.

The digital twin is a method of constructing objects that exist in real space in a virtual space, and is useful for predicting damage by simulating events such as natural disasters. For rare events such as earthquakes, the application of the digital twin is a very effective method in terms of business continuity planning, evacuation planning and seismic reinforcement. Therefore, the author's research team is constructing an earthquake-disaster digital twin for residential buildings. The earthquake-disaster digital twin requires the construction of analytical models of the ground, buildings, furniture, etc., and the authors are constructing an analytical model of lifts, especially the ropes, which are frequently damaged.

This paper presents an overview of the method and the results of a case study. The method used in this paper is based on the wave equation and takes into account the spatial distribution and time variation of the tension on a rope.

11. AI based building traffic management system .

Mehdi Mottaghi

Iran.

In this study, we explore the benefits of employing an AI-based control system to enhance the optimization response and establish an AI bot capable of conducting pre-design traffic analysis through data acquired over its operational lifespan.

Since the 1960s, lift control systems have transitioned from relay-based to utilizing neuro-fuzzy algorithms, driven by advancements in computational power and electronic technology, focusing on optimizing car/hall allocation, waiting times, and loading capacity.

The primary challenge with current systems is their inability to adapt to unforeseen changes in traffic patterns, building usage alterations, and modifications made to the building's setup after the initial design phase or during its lifetime.

Additionally, changes in user behaviour and unforeseen events in the building can lead to unexpected lift system saturation.

To enhance service quality, it is clear that implementing an AI-driven decision-making process is essential.

The key difference between intelligent systems and static ones lies in the capability of intelligent systems to self-improve based on future predictions made using AI and machine learning techniques.

The approach involves training a standalone AI engine with the broadest set of real data available for training to create an optimization system for elevator management.

Incorporating a Natural Language Layered Model (NLLM) into the AI engine allows system conditions to be negotiated through linguistic means. For example, a building manager could set parameters for the AI, such as instructing the system to request passengers on the first two floors to use stairs instead of elevators on busy Saturday evenings, thereby modifying the algorithm controlling the elevator system accordingly.

12. Evacuation dispatching: strategies to get as many people out as possible as quickly as possible using lifts.

Dr Richard Peters.

Peters Research Ltd, UK.

Modern lift dispatchers are designed to optimise passenger waiting and transit times, with a relatively small proportion of the total building population using the lifts in any 5-minute period. In an evacuation scenario, the passenger demand is significantly higher, and conventional dispatching strategies are no longer optimum. In this paper, the author explores how to increase handling capacity so that lifts can help empty buildings as quickly as possible. Lessons from round-trip time calculations and traditional dispatcher design strategies are considered to help understand how to optimise lift evacuation.

Risk-based evacuation prioritising floors according to their likely order of being compromised is explored. New user interfaces are needed to inform and reassure anxious passengers waiting for evacuation.

13. Artificial intelligence embedded image process based fatigue life determination on wire ropes subjected to bending loads.

Mohsen Seyyedi, Adem Candaş, C. Erdem İmrak

Istanbul Technical University, Turkey.

In lift systems, the repeated bending movement of steel wire ropes over sheaves induces fatigue failure, which is a critical safety concern. Accurately assessing the fatigue life of hoisting ropes is an important issue for the reliability of lift systems.

Factors influencing fatigue life include rope structure, the sheave-to-rope diameter ratio (D/d), operational speed, and applied tensile force. Fatigue occurs primarily through wire fractures in outer strands. The quantity of these fractures dictates when the rope should be replaced.

However, quantifying these fractures without halting operations poses significant challenges in terms of downtime and financial impact. This study introduces an innovative approach that employs image processing enhanced by artificial intelligence within a fatigue testing setup. Utilizing high-speed cameras, the system aims to detect the evaluation of fatigue failure. Overall, this research combines cutting-edge technology to enhance fatigue testing methodologies.

14. New technologies that improve escalator passenger safety.

Dr Rory Smith.

University of Northampton, USA.

New technologies such as variable frequency drives can greatly improve escalator passenger safety. These technologies and how they work are explained.

Additionally, existing devices and procedures required by the ASME A17.1 code but not required by BS EN 115 that can greatly reduce the frequency of occurrence of entrapments as well as the severity of the harm caused by entrapments are explored.

15. Bowtie diagrams, a tool to improve risk analysis.

Dr Rory Smith.

University of Northampton, USA.

Risk analysis in the lift and escalator Industry is usually conducted following the guidelines of ISO 14798: 2009. The method defined in this standard works well.

Bowtie diagrams are a graphic representation of a hazard and the mitigations that either reduce the probability of occurrence of a hazardous event or reduce the harm caused by the event.

Bowties help the team who is conducting a risk assessment by allowing them to visualise the issues involved. Bowties also help the personnel who are at risk to better understand the hazard and how they can reduce their risks. Bowties and how to employ them are then explained.

16. Car acceleration during buffering process of lifts.

Professor Stefan Vöth.

Technische Hochschule Georg Agricola, Germany.

Industrial hydraulic buffers seem to be standard equipment for industrial machinery. They are used for the limitation of car accelerations and the reduction of impact loads on structures during processes of kinetic energy reduction. This is realized by a controlled buffer force acting along the stroke of the buffer. The product of buffer force and stroke results in the energy dissipated during a buffering process.

The controlled and restricted buffer force is a result of the load mass, the load speed and the buffer stroke chosen. In order to gain a suitable buffer capacity the maximum values of mass and speed are considered first. Nevertheless the consideration of less mass and/or less speed may be relevant. Lower loads lead to higher accelerations especially. These accelerations have to meet the requirements of standards as EN 81-20 and of comfort.

The contribution shows the effects at a certain lift example on basis of simulation. The buffer designs under consideration of full load and partial load are considered in comparison in order to find a suitable system set up.

LIFT & ESCALATOR SYMPOSIUM

This paper was first published at the 14th Symposium on Lift and Escalator Technologies, 20-21 September 2023, organised by The Lift and Escalator Symposium Educational Trust. For more information see ***www.liftsymposium.org***

SMARTER BUILDINGS: IOT-ENHANCED TRAFFIC ANALYSIS EMBEDDED IN LIFT SENSORS

MICHELE GUIDOTTI
Senior Product Manager at CEDES AG, Kantonsstrasse 14, 7302 Landquart, Switzerland

Keywords: Smart buildings, people counting, traffic analysis, IoT.

Abstract: From manual people counters to 3D camera imaging, traffic analysis technology has come a long way in the last few decades. There are various technologies and commercial solutions available in the market today for people counting. Smart devices designed for other purposes, such as light curtains and time-of-flight camera sensors for lift door safeguarding, can have the people counting function embedded in them as well. Thanks to IoT, this sensor data can be computed and visualized for numerous applications, including lift usage optimization and predictive maintenance based on wear and tear. However, the potential of traffic data collected by lift sensors goes beyond the lift itself. It provides valuable insights on people flow in the building as a basis for informed maintenance and business decisions, energy saving, and building usage optimization. As a result, the lift is becoming an important part of the smart building ecosystem.

1. INTRODUCTION

There are several modern technologies that can be applied for people counting, including Wi-Fi tracking, ultrasonic sensors, infrared beams, thermal or time-of-flight cameras, and enhanced CCTV systems. Each technology has certain advantages and disadvantages. The latter include low accuracy (like ultrasonic or thermal sensors) or privacy issues (in case of Wi-Fi tracking and CCTV). This paper focuses on two people counting methods that can be successfully applied in lifts as well as entrance automation systems - light curtain infrared beams and 3D ToF (time-of-flight) camera sensors. First, the data acquisition process is discussed, followed by possible visualizations of processed information. In the last part, the value of this data for end users in the lift business as well as in the wider context of a smart building ecosystem is explored.

2. DATA ACQUISITION AND OUTPUT

2.1. LIGHT CURTAIN

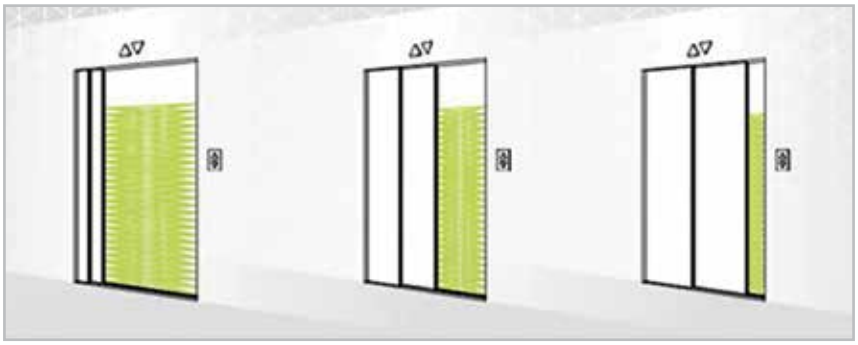
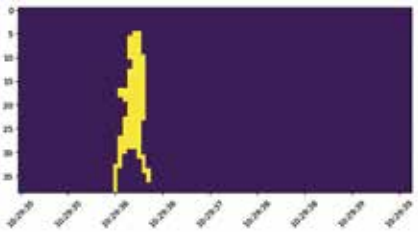


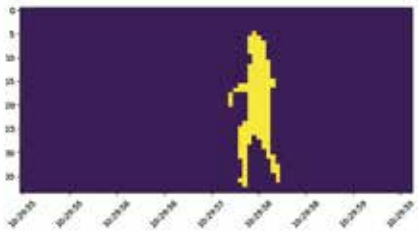
Figure 1 Image of a light curtain during an automatic door closing sequence

When a person passes through the beams of the light curtain, an image is captured. Below, we will analyse examples of one person and two people using a lift.

(a) Scanned image of one person entering and exiting a lift over time



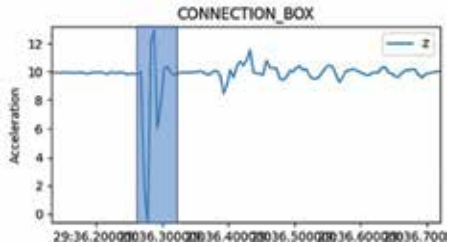
(b) Scanned image of entering



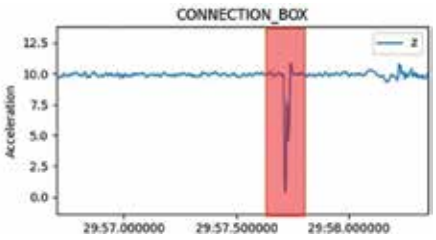
(c) Scanned image of exiting

Figure 2 Light curtain scanned image

As shown in Figure 2, the scanned image from the light curtain can describe the shape of a person but cannot indicate the walking direction, which makes it difficult to count people in the lift. Additional information (shown in Figure 3) is provided by an accelerometer, which is installed in the cabin. It indicates the cabin movement when people are entering and exiting the lift.



(a) Accelerometer during entering



(b) Accelerometer during exiting

Figure 3 Accelerometer data of the event showed in Figure 2

As shown in Figure 3, the cabin is quite stable before and during the ride. A significant movement is captured during entering and exiting the lift. Moreover, the behaviour of entering and exiting are different, which makes it possible to count people traffic with this solution.

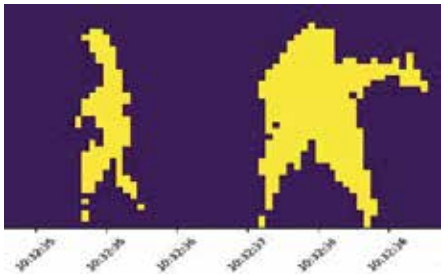
(a) Video frame during entering

(b) Video frame during exiting

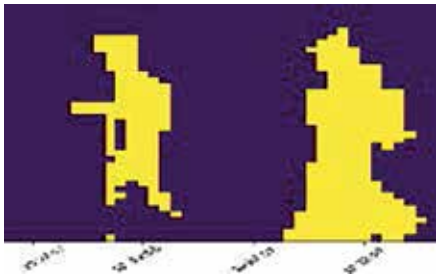
Figure 4 RGB video camera view of the event shown in Figure 2

Figure 4 shows an example frame of the mentioned entering and exiting event in Figures 2 and 3 from another RGB video camera, which is not included in this system. In the second example, two people are using a lift.

(a) Scanned image of two persons entering & exiting a lift over time



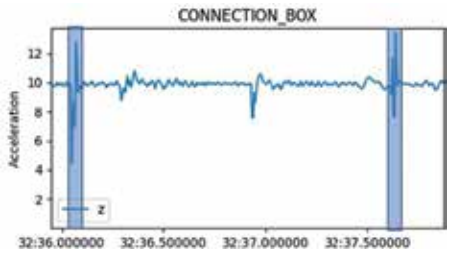
(b) Scanned image of entering

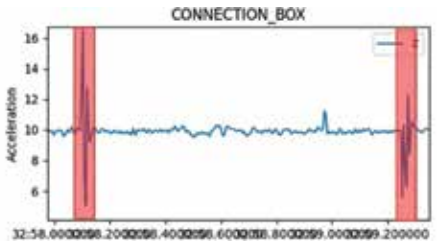


(c) Scanned image of exiting

Figure 5 Light curtain scanned image

Figure 5 shows the scanned image from the light curtain of two persons entering and exiting the lift. Same as shown in Figure 2, the human shapes are clear, but the walking direction is difficult to tell.





(a) Accelerometer during entering **(b) Accelerometer during exiting**

Figure 6 Accelerometer data of the event showed in Figure 5

As shown in Figure 6, the cabin is quite stable before and during the ride. A significant movement was captured during the entering and exiting of the lift for each person separately.

(a) Video frame during entering **(b) Video frame during exiting**

Figure 7 RGB video camera view of the event shown in Figure 5

Figure 7 shows an example frame of mentioned entering and exiting events in Figures 5 and 6 from another RGB video camera.

2.2. 3D IMAGE IN FRONT OF THE CABIN

The 2019 North American Elevator Safety Code (ANSI A17.1-2019 / CSA B44-19) defines new requirements for the means of detecting persons or objects between the doors (2D) or approaching the lift (3D). A 2D light curtain combined with a 3D ToF (time-of-flight) sensor and a controller can fulfil all these code requirements (Fig. 4 and 5).

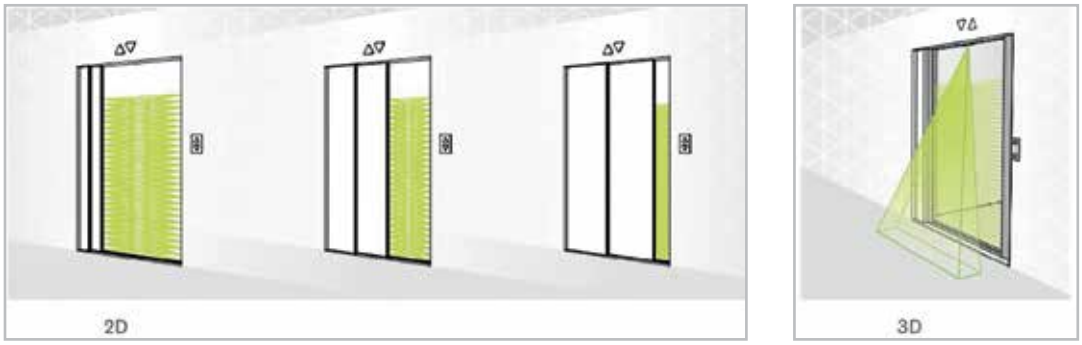


Figure 8 2D light curtain combined with a 3D time-of-flight sensor

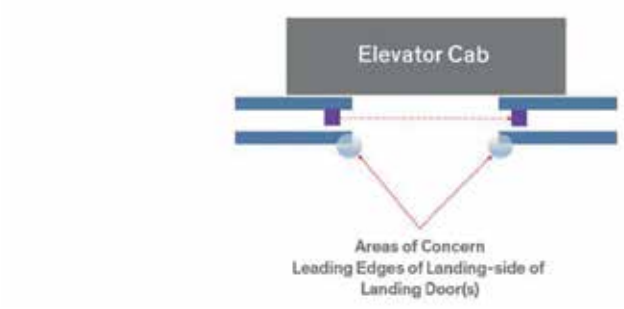


Figure 9 The detection areas of the system elements represented by red lines

When a person passes through the areas of concern, an intensity image is captured. Here is an example (shown in Figure 10) of a captured intensity image and its corresponding people detection results.

(a) No object detection

(b) One person is detected during entering the lift

(c) One person is detected during exiting the lift

Figure 10 Intensity image through a 3D ToF sensor and its object detection results

In Figure 10, the left side is an intensity map captured by a 3D ToF sensor, while the right side is an indicator of the object detection results. Blue indicates no detection of the object, and green indicates detection of the object. Compared to a light curtain solution, a 3D sensor can provide a clearer image. The walking directions are possible to calculate from its intensity images.

2.3. 3D IMAGE IN THE LIFT CABIN

There are also 3D ToF sensors that offer full door protection, without the need for an additional light curtain (Fig. 11). The figures below show an example with two people using the lift.

Figure 11 Full door area safeguarding with a 3D ToF sensor

Below, an example with two people using the lift is analysed.

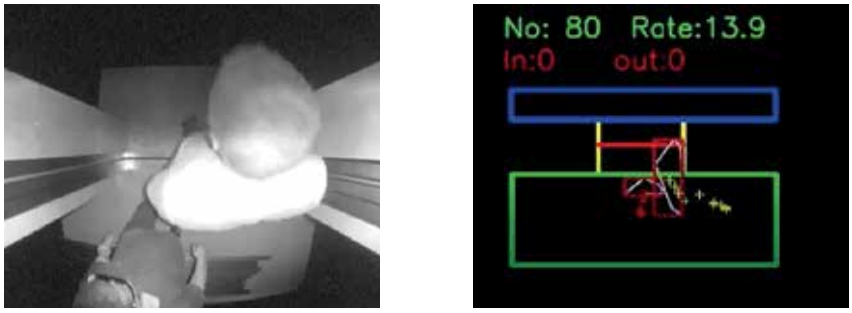


Figure 12 Two persons entering the lift

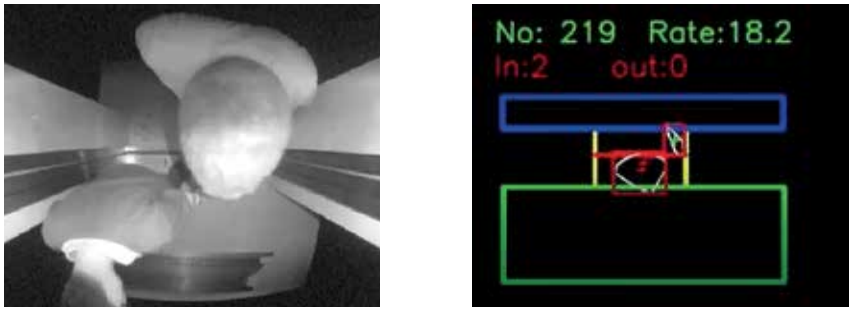


Figure 13 Two persons exiting the lift

Figure 12 shows an intensity image from a high-resolution 3D ToF sensor mounted in the transom on the left, and its related calculated results from input video frames on the right. The blue rectangle indicates the inside region of the lift, the yellow rectangle indicates the door region, and the green rectangle indicates the outside region of the lift. Additionally, red rectangles indicate detected objects and their tracking trajectories. The results show the detection of a person and tracking of a detected person. Counting entering and exiting people can be done in an accurate way.

2.4. TRAFFIC VISUALIZATION

This subsection illustrates some possible ways to visualize people counting and lift traffic overviews based on data acquired from technologies embedded in lift sensors.

Figure 14 Heatmap of the utilisation of a 20-storey lift over a 24-hour period

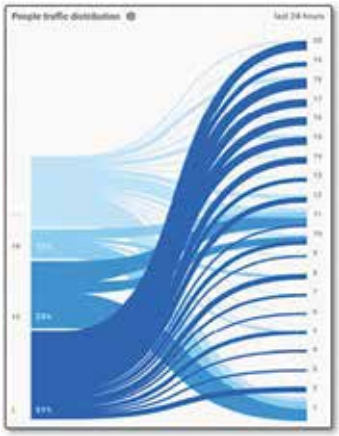


Figure 15 Distribution of passenger traffic in a 20-storey lift; on the left the departure floor, on the right the arrival floor

3. DATA VALUE FOR THE END USER

3.1. DATA VALUE IN THE LIFT BUSINESS

People flow analysis has a significant impact on lift design. Peters, Smith and Evans point out that the design process is all too often based on historical data and assumptions, despite a visible change in traffic patterns in modern office buildings [1]. Real-time traffic data contributes to increasing dispatch algorithm efficiency and lift performance. This applies not only to new lift installations but also to lift modernization projects. People flow analysis helps to make informed decisions on the scope of modernization, such as replacing a conventional control system with a destination control system (DCS) to avoid long waiting times during peak times [2].

Ultimately, the main benefit lies in improving the individual experience of each lift passenger. In today's fast-moving world, sacrificing many minutes of a half-hour lunch break just to wait for a lift becomes a real nuisance, especially when it turns out to be overcrowded after it has finally arrived. Smart, data-driven lift traffic management increases end-user satisfaction by helping them save their most precious resource – time.

Moreover, the people counting function can serve to increase passenger safety where the number of passengers using the lift simultaneously needs to be controlled, for instance, to prevent lift overload. Another interesting potential use case came about during the COVID-19 pandemic, when, following the rules of social distancing, only one person at a time was allowed to use the lift. More importantly, a smart lift system knows that passengers are trapped inside a blocked lift before the passengers themselves do anything about it. Process improvements lead to faster rescue and might even save lives [3].

3.2. DATA VALUE IN SMART BUILDINGS

The potential of traffic data collected by lift sensors goes beyond the lift itself. Combined with data from other sources and visualised in reports and dashboards, this data turns into useful information for facility managers and building owners, improving the people flow and energy management in the building. The collected information becomes a piece of the smart building puzzle, contributing to a more complete picture of people flow.

Figure 16 Various sensors applied in a building (Source: CEDES [4])

Understanding modern building usage trends is crucial for optimization. Most recently, the COVID-19 pandemic has changed the way we work, shop, or eat out, and how much time we spend at home and in the office. According to a report published by Microsoft in 2021 [5], flexible working models such as remote or hybrid work are in high demand from the workforce. Consequently, building management needs to be adapted to this new reality, ensuring optimal use of resources such as energy and space. Rather than relying on past assumptions, building managers can base their decisions on near real-time people flow data.

Reducing building energy consumption while maintaining the comfort level of visitors and tenants remains a major challenge, especially since it depends on individual behaviour to a large extent. Data transparency on energy usage can lead to a change in behaviour towards conscious energy saving. In addition, many building-wide processes can be automated through occupancy-based control, i.e., determining the indoor environment settings based on the number of people in the room. Depending on the current number of occupants, the heating, ventilation, air conditioning (HVAC) and lighting systems can be regulated. This approach requires an efficient people-counting method. Zhang et al. (2022) compare various types of sensing technologies for this application [6].

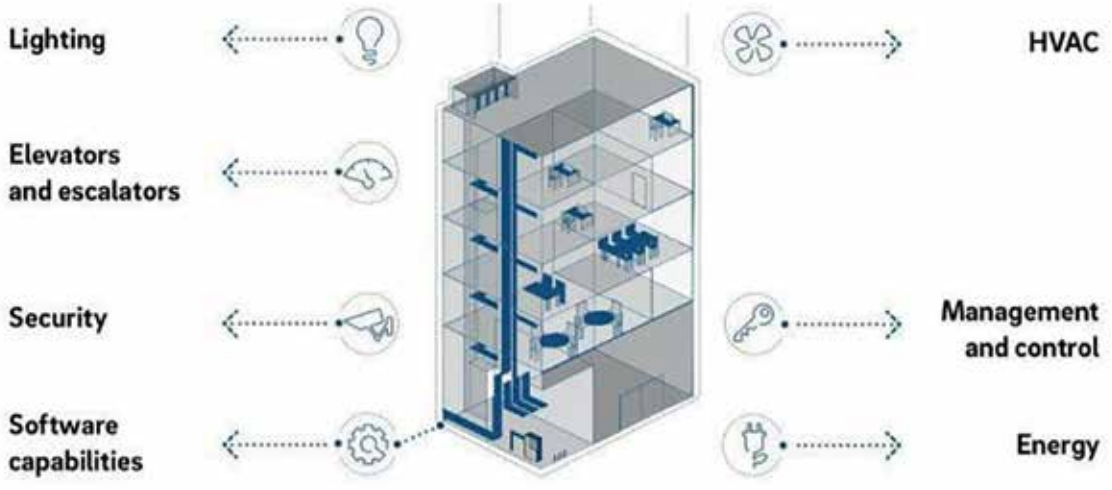


Figure 17 Key sectors in building automation (Source: Roland Berger, July 2020 [7])

Of course, precise occupancy information is relevant not only for comfort but also for safety. Similarly to the lift overload situation, maximum occupancy limits need to be observed in buildings, e.g. under fire safety regulations or social distancing rules [8]. Optimizing people flow with regard to safety is also of utmost importance in large event venues, during concerts, sporting events, etc.

Finally, people flow analysis is a basis for business decisions and can serve to prove the commercial value of real estate, justifying the rent or sales price of a particular property or a space within a property, such as store space in a shopping mall, in an area with particularly high traffic. Another good example is a convention centre, where organisers can share traffic data with exhibitors, for them to calculate their return on investment of a specific trade show booth.

4. CONCLUSION

Data is at the heart of any digital transformation. The more data sources on people flow that become available, the more applications for sustainable, safe, and life-enhancing buildings and cities can be discovered in the future. Vertical transportation is also an important part of this smart ecosystem. Lift sensors such as light curtains and 3D time-of-flight sensors already collect valuable data – feeding them into an IoT platform along with information obtained from other smart building systems provides a complete and transparent picture of how we use our buildings, as well as insights on how to optimise this usage.

REFERENCES

[1] R. Peters, R. Smith, and E. Evans, "The appraisal of lift passenger demand in modern office buildings". *Building Services Engineering Research and Technology,* Vol. 32, No. 2, 159-170 (2011).

[2] M. Siikonen, J. Sorsa, "People Flow Analysis in Lift Modernization", *8th Symposium on Lift and Escalator Technologies (2018),* https://liftescalatorlibrary.org/paper_indexing/papers/00000159.pdf

[3] P.M. Karija, "Common elevator injuries", https://elevatorworld.com/article/common-elevator-injuries/

[4] CEDES company website, https://www.cedes.com/en/company/sustainability/

[5] Work Trend Index Annual Report (2021), https://www.microsoft.com/en-us/worklab/work-trend-index/hybrid-work

[6] R. Zhang, M. Kong, B. Dong, Z. O`Neill, F. Hu, J. Zhang, "Development of a testing and evaluation protocol for occupancy sensing technologies in building HVAC controls: A case study of representative people counting sensors". *Building and Environment,* 208 (2022).

[7] C. Hoyes, R. Mair, "Game changers in the elevator market", https://www.rolandberger.com/en/Insights/Publications/Game-changers-in-the-elevator-market.html (2020)

[8] Q. Huang, K. Rodriguez, N. Whetstone, S. Habel, "Rapid Internet of Things (IoT) prototype for accurate people counting towards energy efficient buildings". *Journal of Information Technology in Construction (ITcon),* Vol. 24, pg. 1-13 (2019), http://www.itcon.org/2019/1

BIOGRAPHICAL DETAILS

Michele Guidotti – a graduate of ETH Zürich and the MIT Sloan School of Management, an IoT expert with extensive experience in the lift industry (Schindler Group), currently Senior Product Manager at CEDES working on an IoT business case.

LIFT & ESCALATOR SYMPOSIUM

This paper was first published at the 14th Symposium on Lift and Escalator Technologies, 20-21 September 2023, organised by The Lift and Escalator Symposium Educational Trust. For more information see www.liftsymposium.org

THE GLOBAL DISPATCHER

RICHARD PETERS
Peters Research Ltd., Bridge House, Station Approach, Great Missenden, Bucks, HP16 9AZ, UK

Keywords: Traffic control, dispatching, global, universal, conventional control, destination control,single deck, double deck.

Abstract: A modern lift traffic control system, often known as a dispatcher, can collect passenger calls in several ways. Conventional dispatching uses up-and-down buttons on the landing with additional buttons for each floor in the car. Destination control dispatching uses destination input devices on the landings so that passengers can select their required floor when the lift is first called. Hybrid dispatching systems use a combination of landing call buttons, car call buttons and destination input devices. Aside from a range of input devices, advanced dispatchers may manage single and double-deck lifts, multiple lifts in the same shaft, and a combination of these lift types within a lift group. This paper describes how the same dispatching software can manage all input devices and lift types by applying a unified approach to lift dispatching. The core software is built on a lift controller software model, which can manage all lift and call types. Unknown information, for example, future car calls once a landing call is answered, is predicted. The choice of which lift serves which call is made by applying a simulation model, which assesses the outcome of alternative allocations the dispatcher could make. The Global Dispatcher applies the Global Dispatcher Interface.

1. INTRODUCTION

Lift dispatching describes managing and coordinating the movement of lifts within a vertical transportation system to transport passengers and goods efficiently between different floors. Lift dispatching plays a pivotal role in managing the efficient movement of passengers within multi-story buildings.

Conventional dispatching uses up-and-down buttons on the landings with additional buttons for each floor in the car. Destination control dispatching uses destination input devices on the landings so that passengers can select their required floor when the lift is first called. Hybrid dispatching systems use a combination of landing call buttons, car call buttons and destination input devices. Aside from a range of input devices, advanced dispatchers may manage single and double-deck lifts, multiple lifts in the same shaft, and realistic combinations of these lift types within a lift group.

The objective of the Global Dispatcher is to provide a unified framework so that all realistic options can be addressed within a single set of dispatcher software. This paper sets out an approach to solving this problem.

2. THE CONTROLLER

2.1. ABOUT THE LIFT CONTROLLER

Lift controllers are responsible for managing the movement and behaviour of lifts in a building. There is one lift controller per lift. The primary purpose of a lift controller is to ensure safe, efficient, and smooth transportation of passengers or goods between different floors.

The lift controller monitors various inputs, such as button presses inside the elevator car and on the floors, door status, and car position. Based on these inputs and the pre-programmed logic, the controller determines the appropriate actions, such as opening or closing the doors, stopping at a floor, and travelling to the desired destination.

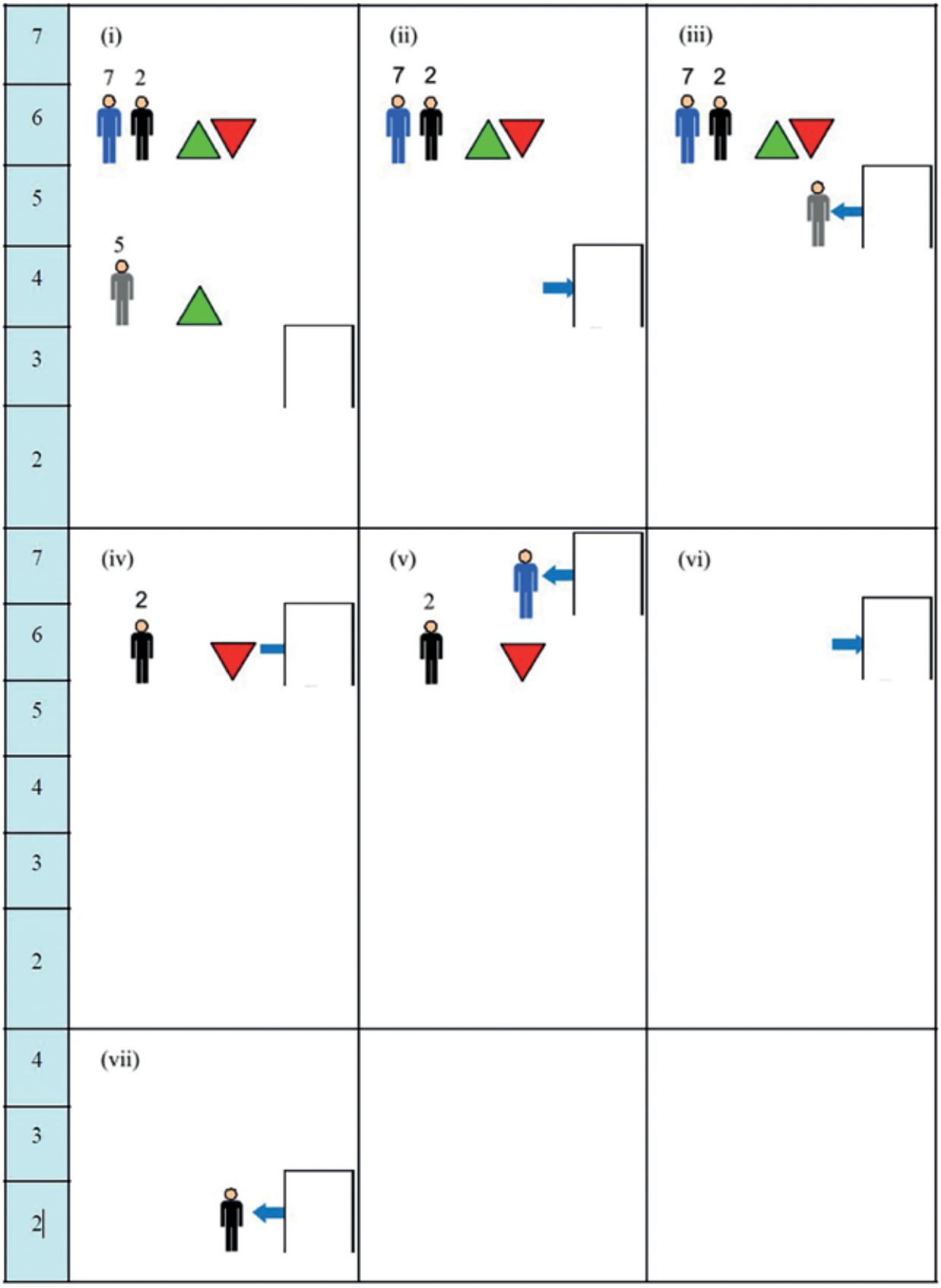


Figure 1 Collective operation (passenger destinations shown above heads)

2.2. COLLECTIVE CONTROL

A single (simplex) lift does not need a dispatcher; its controller includes software enabling it to serve its calls logically. Most modern lifts answer calls collectively, as illustrated in Figure 1. All landing calls and the resulting car calls in one direction are served; then, the car reverses and serves calls in the opposite direction.

For lift groups, a simple approach to dispatching is to have separate dispatching software to decide which lift will serve which call. The inputs are the status of the lifts and the calls registered. The outputs are which lifts should serve which landing and/or destination call. The dispatcher software must also understand collective control to assess how long each lift would take to answer a call. Once the allocation is made, the call can be passed from the dispatcher to the selected lift, adding it to its schedule according to collective control rules.

The problem with this approach is that all lift controllers implement collective control slightly differently, and the assumptions of the dispatcher and controller can conflict. For example, consider the scenario illustrated in Figure 2 (i) where a lift is travelling to serve a down call. While the lift is travelling to the down call, a new call is registered travelling up from the same landing; see Figure 2 (ii). The dispatcher cannot, with confidence, predict whether the controller will serve the up or down call first.

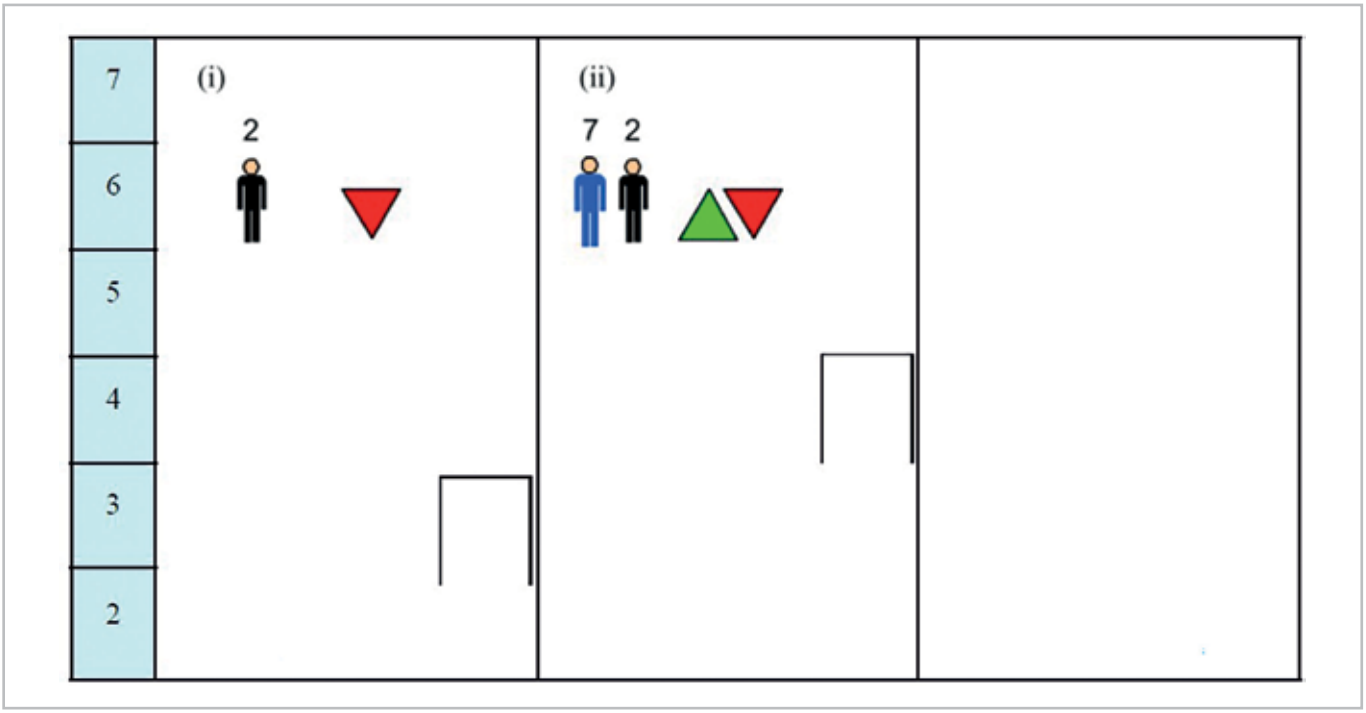


Figure 2 Collective control operational inconsistencies – which call will be served first?

There are also scenarios where the dispatcher might not want to be restricted by the controller's logic. For example, if both passengers had loaded in Figure 1 step (iv), the stop at step (vi) could have been avoided, saving time. A passenger would be taken in the "wrong direction" at first, which is considered unacceptable [1]. Nevertheless, with destination control, these so-called "reverse journeys" can be advantageous [2] and may be a dispatcher option.

Thus, for a Global Dispatcher capable of working with a range of lift controllers, the collective control logic is best removed from the lift controller and implemented solely as part of the dispatcher function; the Global Dispatcher is then responsible for instructing the lift on its destination floors, one at a time, rather than allocating calls to the lift controller implementing its own version of collective control.

2.3. DOOR OPERATION

As for the collective control logic, the lift controller has historically managed door operation. This limits the system's overall efficiency as the dispatcher has additional information, which can save time. For example, in some instances, the dispatcher knows that just one person is loading or unloading the car. Once the door beams have been broken and reestablished, an intelligent dispatcher will know the doors can be closed immediately rather than waiting for a lift controller's dwell time to expire. For safety reasons, the lift controller must remain in charge of opening and closing the doors, but the Global Dispatcher can provide the logic to send door open and close requests. To do this, the dispatcher must be provided (by the controller) with door beam status so it knows when passenger transfer begins and ends.

3. COLLECTIVE CONTROL WITHIN THE GLOBAL DISPATCHER

3.1. MANAGING CALL TYPES

The collective control function within the Global Dispatcher needs to manage collective control for both destination calls and conventional calls generated by passengers, see section 7. The mixture of call types is possible as a destination call is equivalent to a landing call with a car call [3]. When a landing call is registered, it can be treated as a destination call with an inferred car call. Once a landing call is answered and any new car calls have been registered, the destination call can be updated. For example, a down call from level 7 may initially be treated as a destination call from level 7 → ground floor. When the down call is answered, and a car call to level 1 is registered, that destination call may be updated from level 7 → ground to level 7 → level 1. In some instances, for example, using load weighing and when multiple car calls are registered, one landing call may be assumed to spawn multiple destination calls; for example, a down landing call from level 7 may initially be treated as a single destination call from level 7 → ground floor. If the load weighing demonstrates two extra passengers load at level 7, and then car calls to levels 3 and 4 are registered, the single destination call level 7 → ground may be replaced by two destination calls, level 7 → level 4 and level 7 → level 3. Aside from enabling call types to be mixed, this approach brings passenger-centric dispatching to conventional control, see section 4.1.

3.2. LIFT TYPES

The collective control function is designed to manage double-deck lifts; a single-deck lift is treated as a double-deck lift but with a block on any allocations to the (non-existent) upper deck. Two lifts per shaft are implemented based on single-deck lifts with an additional rule set, see section 6.

3.3. APPLICATION OF THE COLLECTIVE CONTROL FUNCTION

The collective control function is applied within the Global Dispatcher in two different contexts:

1. To model the movements of the lift, determining the probable outcome if a call is allocated to a lift. This helps the dispatcher to choose the "best" lift to allocate a call to.

2. To determine where to send the lift to and door operation once calls have been allocated to lifts.

In the second context, controlling the actual lift, the real system provides the door and door beam status, which changes due to real passengers loading and unloading a lift. In the first context, an internal simulation, the simulation code provides the door and door beam status, mimicking the effect of passengers based on its knowledge of the registered calls.

4. OPTIMISATION GOALS AND ALLOCATING LIFTS

4.1. SYSTEM VERSUS PASSENGER-CENTRIC OBJECTIVES

There are many approaches to allocating calls to lifts. A common strategy for conventional control is to assess the Estimated Time of Arrival (ETA), i.e., how long would it take lift A, lift B, and lift C to answer a new landing call. The lift with the lowest ETA is allocated the call. There may be other considerations; for example, a "co-incident call bonus" may be applied to reduce the ETA and make it more likely that lifts already stopping at the landing call floor receive the allocation [4].

Many dispatchers use these and other system-based measures to choose the "best lift". A more sophisticated approach is to make the assessment passenger-centric. This is the basis of most destination control algorithms [1] [3], which consider every passenger's waiting and transit time.

Passenger-centric optimisation goals can also be applied to conventional and hybrid control if conventional calls are translated to destination calls (see section 3.1) before the allocation process. The internal simulation of the Global Dispatcher only needs to recognise destination calls.

By making the objectives passenger-centric, any practical combination of destination and conventional landing calls can be allocated for any lift type (single-deck, double-deck, two cars per shaft).

4.2. OPTIMISATION ALGORITHMS

The objectives are implemented in an optimisation algorithm which translates each "passenger experience", as determined by the internal simulation, into a cost. The increase in total cost arising from an allocation of a call to a lift can be determined, and the lift with the lowest cost is allocated.

An optimisation algorithm based on minimising the total time to destination is widely applied. Still, research into the psychology of waiting suggests that different parts of the journey may be more frustrating than others [5] [6].

To address this, the optimisation algorithm can account for a range of human factors. Indeed, it is possible to optimise on anything that can be modelled, including energy consumption [7].

Specific to double-deck lifts and systems with two lifts per shaft, a passenger's journey may be delayed by unseen activity in another lift or cabin delaying a passenger's journey. This can be addressed by breaking up the lift journey into more phases, including departure delay and blind departure delay [8]. If the relative frustration of each phase of the lift journey can be qualified, this can also be part of the optimisation algorithm.

The disproportionate "pain" of long waits can be accounted for if each extra second is weighted more than the previous [7].

The application of Artificial Intelligence is beyond the scope of this paper, but for an introduction, refer to [4].

5. DOUBLE-DECK LIFTS

Double-deck lifts have two cabs in one unit, serving adjacent floors together. Escalators connect the lower and upper ground floors. The technology is available from most major suppliers.

Double-deck lifts are most efficient if, during peaks, lower cabs serve odd floors and upper cabs serve even floors. With destination control, this restriction is easy to avoid in the software, although it can significantly impact handling capacity and the overall quality of service.

The Global Dispatcher implementation is based on applying the collective control function. There are restrictions aside from the lower cab not being able to serve the top floor and vice-versa; some allocations must be banned.

5.1. BANNED ALLOCATIONS DUE TO PASSENGER LOADING THE WRONG CAR

In Figure 3, a passenger is loaded into the upper cab travelling to level 6. There is a passenger at level 6 wanting to travel to level 8. The dispatcher must consider both lower and upper cab allocation possibilities. If the lower cab is allocated, the upper cab will stop at level 6 first and the lower cab second. The person will get into the upper cab instead of the lower cab by mistake. So, the allocation of the passenger to the lower cab must be banned.

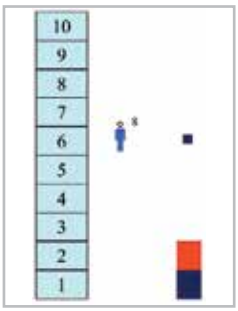


Figure 3 Scenario where person loads the wrong car

6. TWO CARS PER SHAFT

6.1. GENERAL

Installations with two cars per shaft are currently only available from one supplier [9]. Their handling capacity limit is comparable to double-deck lifts, which is apparent if you consider them as a double-deck lift with an additional degree of freedom, i.e., the two cabins are not attached to each other [10].

Managing two lifts in one shaft introduces unique dispatching challenges as follows. The core Global Dispatcher group collective algorithm must be supplemented by additional logic to avoid collision, impasse scenarios, and passengers getting into the wrong car.

6.2. COLLISION AVOIDANCE

The first step required is to have a collision avoidance strategy; for example, see Figure 4 from [7]. This involves holding back one car where the next destination cannot be completed without collision and inserting additional calls to move an obstructing car out of the way.

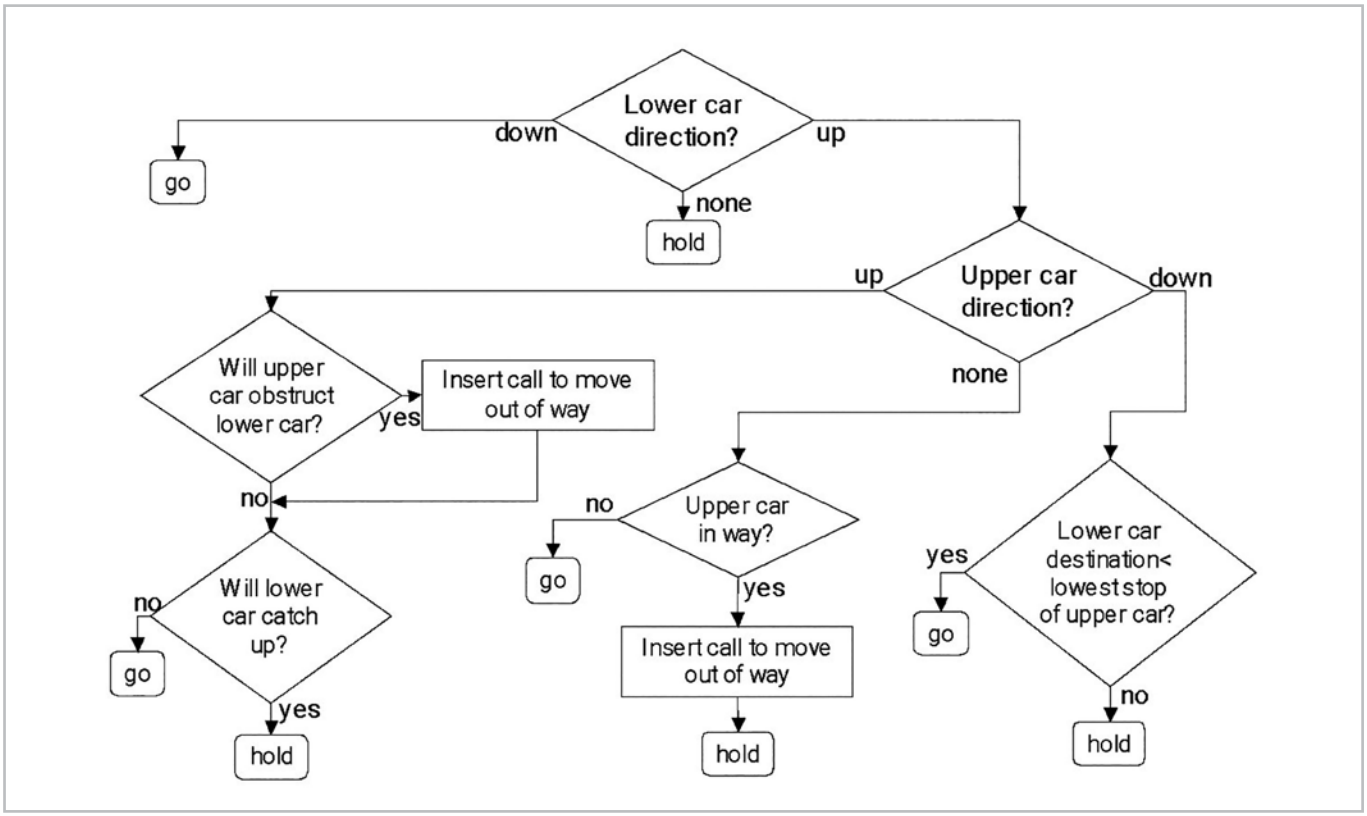


Figure 4 Collision avoidance strategy

6.3. BANNED ALLOCATIONS DUE TO IMPASSE SCENARIOS

Another issue is that some combinations of calls result in an impasse; this occurs when to complete the allocated calls, we must reverse a car which already has a passenger in it, see Figure 5.

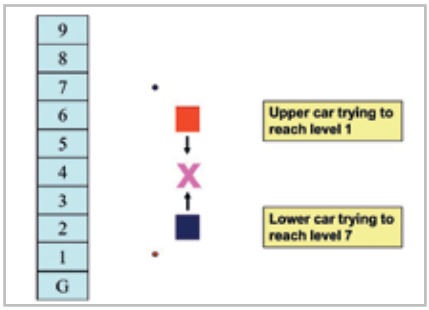


Figure 5 Impasse scenario

6.4. BANNED ALLOCATIONS DUE TO PASSENGER LOADING THE WRONG CAR

Like double-deck lifts, there is a risk that a passenger will get into the wrong car. In the example represented in Figure 6, the dispatcher wants to consider allocating a call from level 7 to the lower car. However, the upper car is already scheduled to stop at level 7. As the two cars are both loaded from the same landing doors, the passenger that the dispatcher wants to load the lower car is likely to load the upper car by mistake.

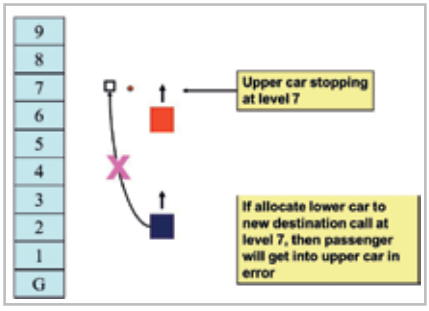


Figure 6 Scenario where person loads the wrong car

7. IMPLEMENTATION

The Global Dispatcher applies the Global Dispatcher Interface [11]. Messages are communicated over TCP/IP applying Protocol buffers, which is a language-neutral, platform-neutral, extensible mechanism for serializing structured data.

All the dispatching calculations are implemented in a single software module (a self-contained and reusable unit of code). In simulation [12] this software module runs in parallel to the simulation software on the user's computer. The same software module is run in buildings on an Industrial IoT Edge Gateway device [13] to direct lift controllers [14].

The Global Dispatcher applies central (rather than distributed) control as part of the group controller, see Figure 7. All the dispatching calculations take place in the group controller, which is required to achieve the benefit of a modular, controller-independent dispatcher. In the alternative, a distributed system, each lift controller is responsible for calculating a "bid" for the new call and any one of the lift controllers can act as a master to review the bids and make the allocation. This distributed approach is inherently robust, something central control relies on a backup device to achieve.

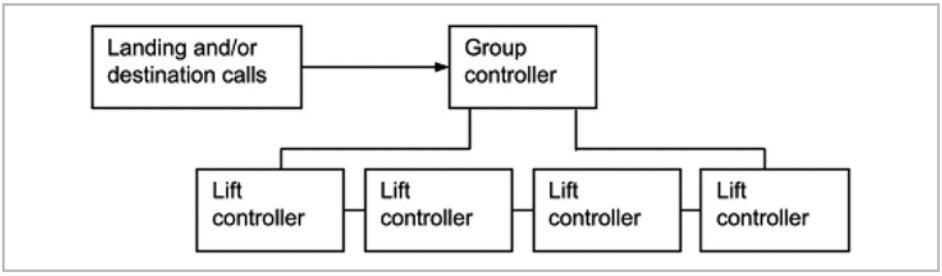


Figure 7 Centralised control (from Figure 9.3 CIBSE Guide D: 2020 [15])

Destination input devices are off-the-shelf Android kiosk tablets with Power-over-Ethernet [16], running a non-proprietary kiosk browser [17]. Conventional landing and car calls require additional hardware to convert button presses to messages on the same network. All software updates and configuration options can be applied remotely from off-site.

8. CONCLUSIONS

The conception of the Global Dispatcher and its evolution emerged from a culmination of thirty-six years engaged in the design and subsequent deployment of dispatcher algorithms.

In that time, the complexity of dispatching has grown with the introduction of diverse input devices and lift configurations. Within our proprietary simulation software [12], we have developed and continue to manage fourteen such dispatchers. While retaining the need to employ legacy dispatchers for assessing modernisation projects, there also exists a requirement for a more optimised resolution to this challenge.

Another challenge encountered has been the necessity of formulating distinct dispatchers for varying controllers. By transferring certain decisions typically made by the controller to the dispatcher, a singular dispatcher software module can be universally applied across all lift controllers.

Furthermore, by applying passenger-centric optimisation objectives and treating conventional landing calls as destination calls with inferred destinations, the Global Dispatcher can evaluate all feasible allocations across different lift configurations under a uniform criterion. This capability empowers the dispatcher to impartially juxtapose calls from diverse input devices against potential assignments to various lift types. While the simultaneous deployment of single-deck, double-deck, and two-cars-per-shaft solutions within the same group is improbable, this capability facilitates evaluating and deploying all conceivable combinations of such.

The Global Dispatcher remains an ongoing undertaking. While not all functions have been fully realised and deployed, the foundational framework and concepts have been substantiated. Preliminary iterations are operational both in simulation and real-world building scenarios.

REFERENCES

[1] G. Barney and L. Al-Sharif, Elevator Traffic Handbook, London, 2015.

[2] S. Gerstenmeyer and R. Peters, "Reverse Journeys and Destination Control," in *Proceedings of the 4th Symposium on Lift and Escalator Technologies,* Northampton, 2014.

[3] R. Smith and R. Peters, "ETD Algorithm with Destination Control and Booster Options," in *Elevator Technology 12,* The International Association of Elevator Engineers, 2002.

[4] R. Peters, "Elevator Dispatching," in *Proceedings of ELEVCON 2014,* Paris, 2014.

[5] C. Bird, R. Peters, E. Evans and S. Gerstenmeyer, "Your Lift Journey – How Long Will You Wait?," in *Proceedings of the 6th Symposium on Lift and Escalator Technologies,* Northampton, 2016.

[6] R. Smith and S. Gerstenmeyer, "A review of Waiting Time, Journey Time and Quality of Service," in *Proceedings of the 3rd Symposium on Lift and Escalator Technologies,* Northampton, 2013.

[7] R. Smith and R. Peters, "Enhancements to the ETD Dispatcher Algorithm," in *Elevator Technology 14,* The International Association of Elevator Engineers, 2004.

[8] S. Gerstenmeyer, R. Peters and R. Smith, "Departure Delays in Lift Systems," in *7th Symposium on Lift and Escalator Technologies,* Northampton, 2017.

[9] TK Elevator, "TWIN - elevator by TKE," TK Elevator, [Online]. Available: https://www.tkelevator.com/uk-en/products/elevators/twin/. [Accessed 10 08 2023].

[10] R. Peters, "Lift Planning for High-Rise Buildings," in *8th Symposium on Lift & Escalator Technology,* Northampton , 2018.

[11] R. Peters, "Global Dispatcher Interface," in *Proceedings of the 6th Symposium on Lift and Escalator Technologies,* Northampton, 2016.

[12] Peters Research Ltd, "Elevate - Peters Research," Peters Research , [Online]. Available: https://peters-research.com/index.php/elevate/. [Accessed 10 08 2023].

[13] Embedded Micro Technology, "Industrial IoT Edge Gateway Raspberry Pi Compute Module," Embedded Micro Technology, [Online]. Available: https://www.embeddedpi.com/industrial-iot-edge-gateway. [Accessed 10 08 2023].

[14] Lester Controls Limited, "Lift Controllers - Controllers Lester Control Systems," Lester Controls Limited, [Online]. Available: https://www.lestercontrols.co.uk/en/controllers/lift-controllers.html. [Accessed 10 08 2023].

[15] R. Peters, "Lift traffic control," in *CIBSE Guide D:2020 Transportation systems in Buildings,* London, The Chartered Institution of Building Services Engineers, 2020, pp. 9-1 to 9-28.

[16] ProDVX Europe Office, "APPC-10XPL | ProDVX," ProDVX Europe Office, [Online]. Available: https://www.prodvx.com/products/appc-10xpl. [Accessed 10 08 2023].

[17] Fully Factory GmbH, "Fully Kiosk Browser Lockdown | Android Kiosk Mode App," Fully Factory GmbH, [Online]. Available: https://www.fully-kiosk.com/. [Accessed 10 08 2023].

ACKNOWLEDGEMENTS

The author would like to acknowledge Dr Mike Pentney of Peters Research Ltd and Mr Brendan Johnson of Lester Controls Ltd without whom the Global Dispatcher and the Global Dispatcher Interface would have remained a theoretical concept.

BIOGRAPHICAL DETAILS

Richard Peters has a degree in Electrical Engineering and a Doctorate for research in Vertical Transportation. He is a director of Peters Research Ltd and a Visiting Professor at the University of Northampton. He has been awarded Fellowship of the Institution of Engineering and Technology, and of the Chartered Institution of Building Services Engineers. Dr Peters is the principal author of Elevate, elevator traffic analysis and simulation software.

WHAT'S IN A NAME?

Like every industry the lift and escalator business has a LOT of acronyms. Dave Coopper has put together a useful guide to many of the ones we all come across.

Photo by Surendran MP on Unsplash

ORGANISATION	ACRONYM	ROLE	WEBSITE
Association Française de Normalisation	AFNOR	AFNOR is vested with a general-interest mission, as defined by the French Standardization Decree of 16 June 2009, to coordinate leadership of the French standardization system.	*https://www.afnor.org/en/about-us/who-we-are/*
British Council for Offices	BCO	Established in 1990, the BCO is Britain's leading forum for the discussion and debate of issues affecting the office sector.	*https://www.bco.org.uk*
British Standards Institute	BSI	The UK national standards body that reaches across the international standards community in developing recognised industry standards.	*https://www.bsigroup.com*
CEN	CEN	The European Committee for Standardisation	*https://www.cencenelec.eu/european-standardization/cen-and-cenelec/*
CENELEC	CENELEC	The European Committee for Electrotechnical Standardisation	*https://www.cencenelec.eu/european-standardization/cen-and-cenelec/*
Chartered Institution of Building Services Engineers	CIBSE	A professional engineering institution (PEI) primarily representing consultants in the lift & escalator industry.	*https://www.cibse.org*
Chartered Institution of Building Services Engineers Lifts Group	CLG	A special interest group within CIBSE for persons with an interest in lifts and/or escalators.	*https://www.cibse.org/get-involved/special-interest-groups/lifts-group*

Council on Tall Building and Urban Habitat	CTBUH	The Council on Tall Buildings and Urban Habitat (CTBUH) is a nonprofit organization for all those interested in the future of cities. It explores how increased urban density and vertical growth can support more sustainable and healthy cities, especially in the face of mass urbanization and the increasing effects of climate change worldwide.	***https://www.ctbuh.org/about***
Deutshes Institut fur Normung	DIN	DIN represents the interests of German stakeholders worldwide. According to an agreement with the Federal Republic of Germany, DIN is recognized as the national standards body for Germany. Wherever standards are set in Germany, DIN is a unifying force.	***https://www.din.de/en***
Elevator World	EW	A lift & escalator industry trade journal based in the USA	***https://elevatorworld.com/***
Elevatori	n/a	A lift & escalator industry trade journal based in Italy.	***https://www.elevatorimagazine.com/en/***
ELEVCON	ELEVCON	An annual International Congress on Vertical Transportation Technologies	***https://elevcon.com/***
Engineering Council UK	ECUK	The Engineering Council is the UK regulatory body for the engineering profession. It holds the national registers of over 228,000 Engineering Technicians (EngTech), Incorporated Engineers (IEng), Chartered Engineers (CEng) and Information and Communications Technology Technicians (ICTTech). The Engineering Council sets and maintains the internationally recognised standards of professional competence and ethics that govern the award and retention of these titles. This ensures that employers, government and wider society - both in the UK and overseas - can have confidence in the knowledge, experience and commitment of professionally registered engineers and technicians.	***https://www.engc.org.uk/***
Engineers Europe	FEANI	The European Body that maintains a register of professionally qualified engineers holding the EurIng title.	***https://www.engineerseurope.com/what-engineers-europe***
Institution of Engineering & Technology	IET	A professional engineering institution (PEI) representing a wide range of qualified engineers.	***https://www.theiet.org/***

Institution of Mechanical Engineers	IMechE	A professional engineering institution (PEI) primarily representing qualified mechanical engineers.	***https://www.imeche.org/***
INTERLIFT	INTERIFT	Interlift is a trade fair for the lift industry and presents lifts, components and accessories in Germany.	***https://www.interlift.de/en/***
International Organization for Standardization	ISO	Through its members (the national standards bodies in 170 different countries) ISO brings together experts from all over the world to develop International Standards.	***https://www.iso.org/home.html***
Lift & Escalator Symposium	LES	A professional symposium of peer reviewed papers held annually since 2011 in the Northampton area and managed by LEET. It is a joint not for profit venture between the CIBSE Lifts Group, University of Northampton & LEIA.	***https://www.liftsymposium.org/***
Lift & Escalator Educational Trust	LEET	The objective of the Lift and Escalator Symposium Educational Trust is to advance education in lifts and escalator and related technologies. The Trust brings together experts from the field of vertical transportation, offering opportunities for speakers to present peer reviewed papers on the subject of their research. Papers are published open source on the Trust's web site.	***https://www.liftsymposium.org/***
Lift & Escalator Industry Association	LEIA	LEIA is the trade association and advisory body for the lift and escalator industry, formed in 1997 by the merging of two long-standing associations with a history dating back to 1932. With a membership covering some 85% of the lift and escalator contracting side of the industry, LEIA represents a single voice for the contracting sector.	***https://www.leia.co.uk/***
Lift & Escalator Library	n/a	A collection of research papers collated by the lift & escalator educational trust and held on Google scholar.	***https://liftescalatorlibrary.org/#***
Lift Industry Charity	LIC	Provides initial financial support to the families of those working within the UK lift industry who are injured or lose their life.	***https://www.liftindustrycharity.co.uk/***
Lift Industry Mental Health Charter	n/a	To promote awareness about wellbeing and mental health in the lift industry	***https://liftmentalhealthcharter.com/***

Lift Industry News	LIN	A lift & escalator industry trade journal based in the UK.	https://www.liftindustrynews.com/
Lift Report	n/a	A lift & escalator industry trade journal based in Germany.	https://lift-report-magazin.de/
LIFTEX	LIFTEX	LIFTEX is an exhibition for the lift, escalator, manufacturing and specification industries. The exhibition is organised by LEIA (Lift and Escalator Industry Association), in consultation with an international network of authoritative trade advisory bodies.	https://www.leia.co.uk/category/liftex/
Safety Assessment Federation	SAFed	The Safety Assessment Federation (SAFed) is a not-for-profit Trade Association representing the independent engineering testing, inspection and certification industries of the UK and Ireland.	https://www.safed.co.uk/
Society of Operations Engineers	SOE	A professional engineering institution (PEI) primarily representing the competent persons undertaking independent engineering testing, inspection and certification in the lift & escalator industry.	https://www.soe.org.uk/
University of Northampton	UoN	A provider of academic courses leading to qualifications in the lift and escalator industry	https://www.northampton.ac.uk/courses/lift-engineering-msc/

TED BARKS

WITH THE LIFT INDUSTRY MENTAL HEALTH CHARTER

TECHNO BARKING!

Our 'Ted Barks' column focuses on the importance of prioritising our mental health. Ted, will look at the various mental health conditions and struggles that many of us will recognise, and how we can start to address them.

WHO IS TED?

I am a French Bulldog who loves to spend time with my owners and has anxiety when left alone or I find myself in a new place.

In this edition's column Ted has a think about technology and how we can all get a bit overwhelmed.

HOW DOES TECHNOLOGY IMPACT YOUR LIFE?

Technology comes in many forms, and even dogs can't escape the technology of today! Whenever I go out, I have a tracker attached to my harness, which is linked to my owner's phone. Sometimes in life you just want to make a break for it and do your own thing and in my case, it does happen! In the event of me chasing the odd bird or squirrel I can be tracked to my rough location and hopefully be found, although my owners could always give me a sausage, and I'll soon be back! But there's no escaping it!

This type of technology and IoT (Internet of things) can be extremely beneficial to our everyday lives. We can find out anything through the internet, talk to loved ones across the world using email, along with WhatsApp and other connected groups to have constant updates. We now have delivery services providing goods online in less than 24hrs, and we have instant access to everything. But does that instant access include yourself?

We are now contactable anytime and anywhere and it's up to us to manage the level of contact, and how we use technology. With continuous notifications through social media and group connections, along with 24/7 emails, it can make you feel overwhelmed and constantly connected, so how do we manage our technology?

Tech exhaustion can have significant mental impacts. Here are some ideas of how to manage it, with helpful suggestions from me (Ted)!

SET BOUNDARIES WITH TECHNOLOGY

Set aside time each week to disconnect. You might use a calendar app to schedule these times or if you don't have a helpful dog like me to rip up your paper calendar, use that to block off at least one hour every week where you won't check email or respond to texts. Can you limit email checks to once per day or restrict social media usage to one hour daily? These small changes can help you avoid tech exhaustion.

LEARN HOW TO USE SOCIAL MEDIA WISELY

Social media has become integral to our lives, but it can also contribute to negative feelings like comparison, interaction dysregulation, information overload, and social overload. Deliberately reducing daily social media use can free up more time to interact with friends and family in the real world.

TED; looking at Instagram pictures of me and my friends is of course a form of relaxation, or you can read a good book?

FIND BALANCE BETWEEN WORK AND PLAY

Strive for balance between work and leisure time. Constantly checking email or social media during downtime can lead to tech exhaustion. Use your free time to relax and unwind instead.

TED: an excellent time to spend with your faithful companion…

DON'T BE AFRAID TO SAY NO

Feeling overwhelmed by technology? Take time to assess what you really need to do. You might find tasks to delegate or outsource, or you might simply need to say no to certain requests.

TURN OFF NOTIFICATIONS

Bin the ping! Constant notifications can contribute significantly to tech exhaustion. Consider turning off notifications altogether to reduce distractions and regain focus. You could consider putting that phone away and just not looking at it?

TED: Please note phone noises can be very disturbing when I am trying to sleep…

PRIORITISE EXERCISE

Regular exercise releases endorphins and serotonin, improving mood and reducing anxiety. Make time for exercise to improve both physical and mental health, especially after spending prolonged periods in front of screens. Taking your dog out for a walk is a great way of meeting new people and getting some extra down time, and don't be tempted to use your phone whilst walking. It not only defeats the object of the exercise but can be dangerous!

TED: this is a no brainer - it's WALK time!

TED SAYS "LOOK AFTER OUR CHILDREN"

Information taken from Barnardo's paper - ***SMH0134 - Evidence on Impact of social media and screen-use on young people's health (parliament.uk)***

The effects of social media and screen-use on young people's physical and mental well-being.

Key facts:

1 in 10 children have a diagnosable mental health disorder – that's roughly 3 children in every classroom. Almost 1 in 4 children show some evidence of mental ill health (including anxiety and depression).

79% of 12 to 15 year olds and 32% of 8 to 11 year olds own a mobile phone. Young people are also extensive users of social media sites, such as Facebook, Instagram and Snapchat. Approximately 86% of 9 to 16 year olds belong to a social networking site.

Children aged 5 to 15 are now spending an average of 5 hours and 24 minutes per day engaged in social media activity, despite being at school for seven hours (five days per week), and spending approximately 190 hours and 16 minute asleep.

ACCESS MENTAL HEALTH RESOURCES

Seeking support from mental health professionals is crucial if you're struggling with tech exhaustion or any other psychological distress. Don't hesitate to lean on your support network and access professional help when needed.

Lift Industry Mental Health Charter - Mental Health Support, Virtual Mental Health Services (liftmentalhealthcharter.com)

The Lift Industry Mental Health Charter

The Lift Industry Mental Health Charter is an initiative which is focused on bringing together the lift industry to support mental health. This includes all lift companies, lift consultants and lift suppliers across the lift industry and their employees. Working together to support the people within the industry with their mental health will make the industry a safer and more supportive place to work.

Clear your mind,
You're not alone
Find help here!

www.liftmentalhealthcharter.com

ELEVATOR PITCH

The lift that takes you to the top of 1 World Trade Center in New York shows the incredible development of the city as it rises, from the 1500s through to 2014 when the illusion clads itself with the WTC fabric. It's here that we meet Michael Craddock, Marketing Manager at Shorts Lifts, ready to experience the journey and learn a little more about him while we're travelling.

DOORS CLOSING, GOING UP...

TELL ME A LITTLE BIT ABOUT YOUR ROLE.

I look after all the marketing at Shorts which includes the website, external communications, management and planning of any events, and a whole plethora of the marketing mix, including our industry-famous giveaways. My goal is to get the right message to the right person at the right time.

CAN YOU TELL ME SOMETHING ABOUT YOUR JOB THAT MIGHT SURPRISE ME – AND OUR READERS?

I believe that my team and I manage the most popular annual event in the UK lift industry – Find Santa. For those who've never played, we run a competition exclusively for lift professionals every Christmas. It started as a tool to promote our website and range of products and services. Although we've been Shorts since 1945, we are still keen to broaden people's understanding of us and what we do.

Find Santa was a very simple concept: hide Santa on our website, then get a clue from a chocolate advent calendar each day and see if you can find him. If you did, you could win a prize; if you didn't, you got a free chocolate. Either way we hope you learned something about us and had fun – and if you can't have fun at Christmas, when can you?! We now distribute over 1000 chocolate advent calendars every year, and I don't think there's another event like it in the industry.

In more recent years, we've linked our event to The Trussell Trust, so for every calendar issued, we make a £1 donation to The Trussell Trust on our player's behalf.

WHAT DO YOU LOVE MOST ABOUT YOUR JOB?

It may sound like a cliché, but it is truly the variety of work I do. One of the things I enjoy about marketing is the creative side – I'm not 'a creative', but marketing allows me to take those elements created by others and express them in a campaign or promotion. I love to add my own personality to everything I do. I'm a Star Wars fan, and on May 4th, we created our own light-hearted video to celebrate the day and show a little more of Shorts' character. ***https://www.linkedin.com/feed/update/urn:li:activity:7192432778771116032***

WHAT'S THE MOST EXCITING DEVELOPMENT IN THE PIPELINE AT SHORTS?

There is so much in the pipeline! We're bringing on a new controller from DMG, which is a massive deal for us. The previous controller, the PB3, was hugely successful and we're taking the best bits of it, alongside customer feedback, and making improvements for an even better product. Marketing-wise, we've launched our summer football challenge, where participants predict the scores of the Euros and can win a prize, and then we've got some open days coming up, and of course, we've got our eyes firmly fixed on LIFTEX 2025.

WHAT IS THE BEST MEAL YOU'VE EVER EATEN?

It's a meal called Steak Portuguese style – but not just any – it's from a restaurant called O Arco in Quarteira, Portugal. We used to visit every year as a family when I was growing up. It's very small, a hidden gem, and the food was absolutely top quality. A meal would last about three hours, it wasn't fast food, but it was always incredible, I have many happy memories of eating there.

WHO MAKES YOU LAUGH?

Me. I have a great sense of humour – loads of things make me laugh, it's part of my personality!

DO YOU HAVE ANY CLAIMS TO FAME?

When I'd been working here at Shorts for about two years, the former Chief Inspector of Schools, Chris Woodhead passed away. During his obituary on the BBC News, they showed archive footage of him where I happened to be in the background, aged 15, dressed as a donkey in my gran's fur coat. He had made a visit to our school to recognise its Ofsted rating progression and my English teacher, Mrs Griffin was a huge Shakespeare fan and had created a production of 'A Midsummer Night's Dream', where I played Bottom. It was quite the surprise to see 15-year-old me on the national news all those years later!

WHAT IS YOUR FAVOURITE THING TO DO OUTSIDE OF WORK?

I love spending time with my family – it's great to be out and about, enjoying time together. I have a seven-year-old daughter and we just love making memories together, it brings me a lot of joy.

WHAT ARE YOU LOOKING FORWARD TO MOST, IN THE NEXT THREE MONTHS?

Disney World. We're there for two weeks, it'll be our third visit – our first trip was our honeymoon and then we took our daughter a couple of years ago. It's an amazing place, and this time we're planning to build our own droid at the Droid Depot. I'm most looking forward to Galaxy's Edge – of course!

IF YOU COULD GIVE YOUR PAST-SELF ONE PIECE OF ADVICE, WHAT WOULD IT BE?

Buy Bitcoin.

AND FINALLY, IF YOU HAD TO CHOOSE YOUR FAVOURITE LIFT, ANYWHERE IN THE WORLD, WHICH ONE WOULD IT BE?

Any lift as long as it reaches its destination! I'm very much looking forward to the Tower of Terror on my Disney trip! I do love this lift though, in 1 World Trade Center, even though you can't see outside, it's incredible to see the evolving skyline of New York City.

It is a truly amazing experience, almost as good as a flying the Millenium Falcon, which I'm sure Michael will enjoy on his upcoming trip! Thanks to Michael for taking a ride with us.

ELEVATE YOUR LIFT GAME: CHOOSING THE RIGHT SIM FOR YOUR GSM

Chaim Grunfeld, Co-Founder and Director of dedicated SIM provider for lift operators, SIMS4Lifts, explains why the right SIM is important.

Lift operators put significant thought into selecting the right GSM, searching for a unit that's not only safe and efficient, but also compatible with their chosen system. Nevertheless, the signal strength they gain from wise decisions is often compromised by the final piece of the puzzle: the SIM.

Whilst it may be tempting to grab any old SIM card from your local shop, this approach comes with significant limitations. Not only do retail SIMs bind you to a single vendor – putting trapped passengers in danger if they're unable to establish a stable connection – but they also reduce control over contract management, given that the operator is required to activate them immediately upon purchase, even before tenancy in the building has begun.

Of course, this leads to wasted spend and potential lawsuits, not to mention a lack of visibility should things break down. With the analogue switch off right around the corner, the burden this has on business will only grow – placing greater onus on lift operators, building managers and business owners alike to put more thought into their lifts' SIMs.

ENSURING RELIABLE SIGNAL

One of the most significant challenges that lift installers face is ensuring constant, reliable coverage within the lift shaft. This challenge becomes even more prevalent in high-occupancy buildings with multiple lifts, as dense structures over several floors can disrupt signal penetration. As such, multi-provider, roaming SIMs are essential, leveraging the combined strength of multiple networks to guarantee consistent, reliable connection. Emergency communications remain uninterrupted, passengers are safe, and the business won't risk failing a LOLER inspection – all thanks to the fact that the two-way lift rescue system now operates using the best mobile coverage available in the moment.

COMMERCIAL-GRADE SIMS

Opting for commercial-grade SIMs is likewise a prudent choice for all lift operators. Functioning without predefined network preferences, these SIMs dynamically select the strongest available network in the area at the time of the rescue call. This non-steered approach ensures that the SIM card always connects to the most reliable network, providing the robust and stable communication required for emergency connections.

STREAMLINING OPERATIONS

Of course, this doesn't resolve the issue of needing to activate as and when you buy – unless you purchase from a provider that offers a self-managed system. Opting for a vendor with its own portal facilitates the remote activation and deactivation of your SIMs, out of hours and on demand. This translates into unparalleled convenience and control, with operators able to manage the entire process independently, even when traditional retail outlets are closed.

With a managed portal, lift operators can also label and track each SIM, allowing them to monitor usage and schedule in auto-renewals to avoid running out of credit when it's needed most.

FLEXIBLE CONTRACT DURATION

By aligning the duration of your SIM contract with the tenancy of your building, it's also possible to save both time and money. Opting for a SIM with flexible contract duration is therefore crucial, particularly as we cannot allow impromptu life events that affect location use or moves to leave lift users without rescue communications service. Whether annual, biannual or three-year contracts, aligning the SIM card's lifespan with operational contracts ensures continuous service, without risk of lapses. This strategic alignment furthermore mitigates the risk of running out of credit during an emergency, ensuring lines remain active.

ADVANCED FEATURES

For lift operators, the priority is ensuring that no emergency call is missed. In certain situations, selecting a SIM card that is VoLTE-enabled can help with this, offering HD voice quality for clearer communication via both voice and data.

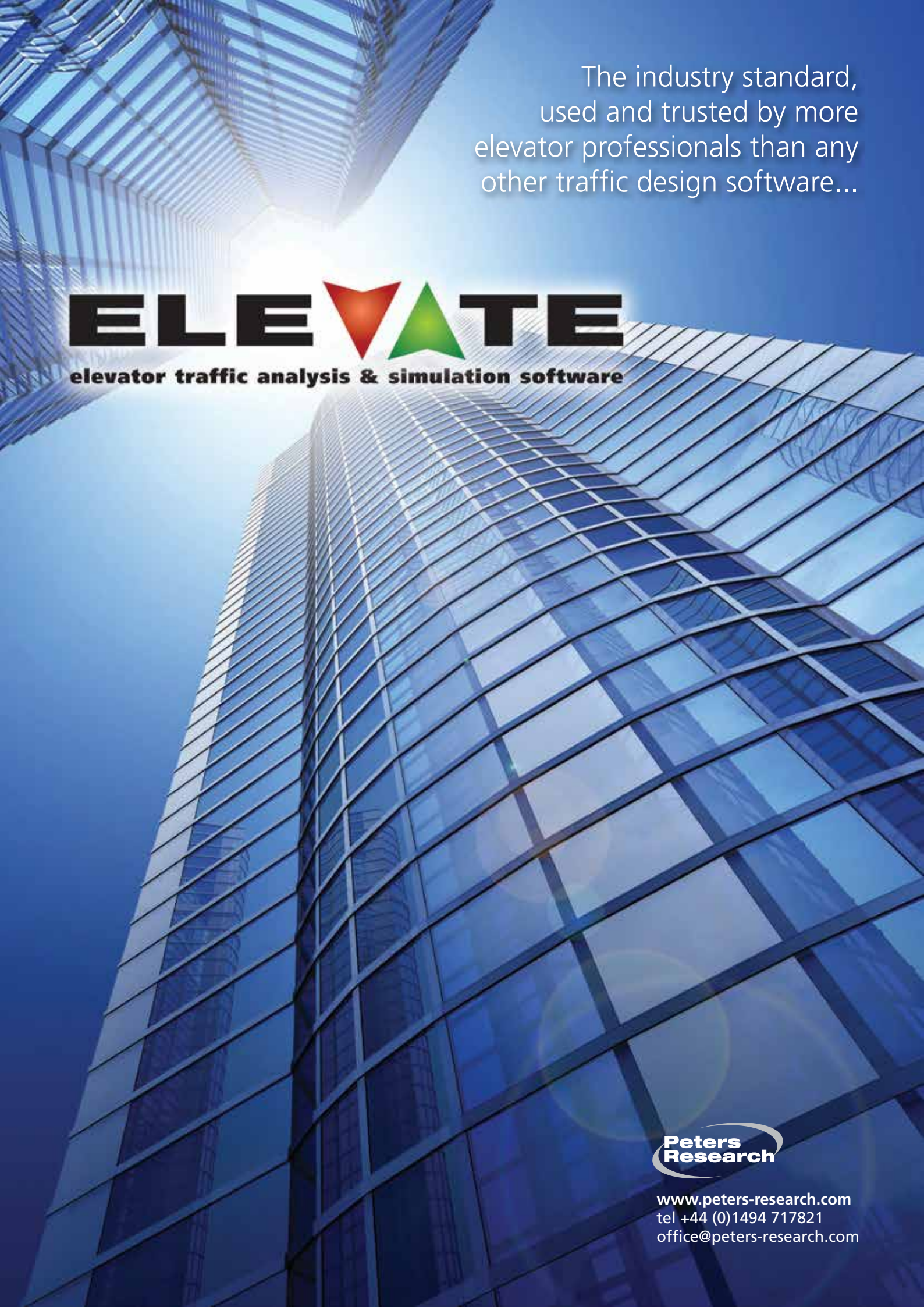
Similarly, looking into machine-to-machine (M2M) solutions can offer improved resistance to the extreme temperatures often encountered in lifts. In addition, M2M SIMs enable real-time monitoring of lift operations, allowing maintenance teams to detect and address issues before they become serious problems. This can reduce downtime and prevent potential accidents, owing to the fact that sensors connected via the SIMs can continuously monitor the lift's condition, tracking parameters such as vibration, temperature and usage patterns to predict upcoming maintenance needs.

In the event of a malfunction or emergency, lifts equipped with advanced SIM features can also send automatic alerts to the service centre for more rapid response.

THE CASE FOR MANAGED SIMS

Ultimately, fitting your GSM with a managed SIM enhances operational efficiency, particularly when working on multiple elevators in multiple buildings, proving financially advantageous. By activating SIMs on demand, lift operators only pay for the time they use, reducing unprofitable spending. Furthermore, this model can transform SIM cards into a revenue stream, allowing operators to earn high margin on the use thereof.

The transition from analogue to digital emergency lines is a pivotal moment for the lift industry. Choosing the right SIM card is not only a matter of compliance but of safety, reliability and operational efficiency, as well. By opting for a professional, managed SIM solution, lift operators can ensure they are well prepared for the future, providing peace of mind and enhanced service for their clients.


The industry standard,
used and trusted by more
elevator professionals than any
other traffic design software...
ELEVATE
elevator traffic analysis & simulation software
Peters
Research
www.peters-research.com
tel +44 (0)1494 717821
office@peters-research.com

LIFT INDUSTRY CHARITY

Clay pigeons and axes meant a great day for the Lift Industry!

Kentfield Country Estate, a small privately owned working farm estate nestled in the heart of Kent on the edge of the North Downs, was the perfect venue to host the Lift Industry Charity's first event of 2024 with clay pigeon shooting and axe throwing.

On the 20th April a great bunch of people from the industry came from near and far to support the charity. Teams were set up and everyone took their places at various stages throughout the designated shooting spots.

Clays were firing left and right, and the camaraderie was fantastic. The teams were all in great spirit and the gods were kind with glorious sunshine (although a little cold!)

Score cards were kept and there was a tie breaker at the end where a shoot off took place between Roger Doswell from Summit Elevators and Mike Lowe from Universal Lifting Hire Services, with Roger lifting the trophy.

In 3rd place was James Edge from Total Lifting Solutions and Callum Riches from Polar Lifts came in fourth.

A big thank you to Ian and his team at Kentfield who organised everything and made sure the guests were taken care of throughout the day.

The ladies who managed the catering supplied home grown beef burgers and refreshment before everyone headed home. It was a fabulous day making new friends, finding a new sport and supporting a great cause.

The UK Lift Industry Charity resulted from an informal group of like minded people who wanted to provide assistance to industry colleagues in times of trouble. The group started organising fundraising events and many people came forward to assist.

A formal charity was set up in early 2007. Since that time, the Charity has made donations in excess of £55,000 to individuals and the families of individuals who have been injured or sadly killed, whilst working in the Industry.
This has only been possible with the help of donations, sponsorships and events.

OUR MISSION

The relief of financial hardship and provision of appropriate support where required to industry colleagues and their families who have been injured whilst working or employed within the industry.

Please visit the link below to donate via JustGiving

https://www.justgiving.com/ukliftindustrycharity

Watch out for more events

Can we help...

Are you employed in the Lift industry?

Have you, or someone you know, had a works related accident?

Did you know there is financial help available?

The UK Lift Industry Charity

Run by Lift People for Lift People

The UK Lift Industry Charity Mission... The relief of financial hardship and provision of appropriate support where required to industry colleagues and their families who have been injured whilst working or employed within the industry.

The Charity has made numerous donations to individuals and the families of individuals who have been injured or sadly killed, whilst working in the Industry. We are continually looking for opportunities where we can assist.

Can we help you, can you help us, would you like to join in the next **2023 Cycling Challenge** just email

reiss.stygal@aa-electrical.com
www.liftindustrycharity.co.uk

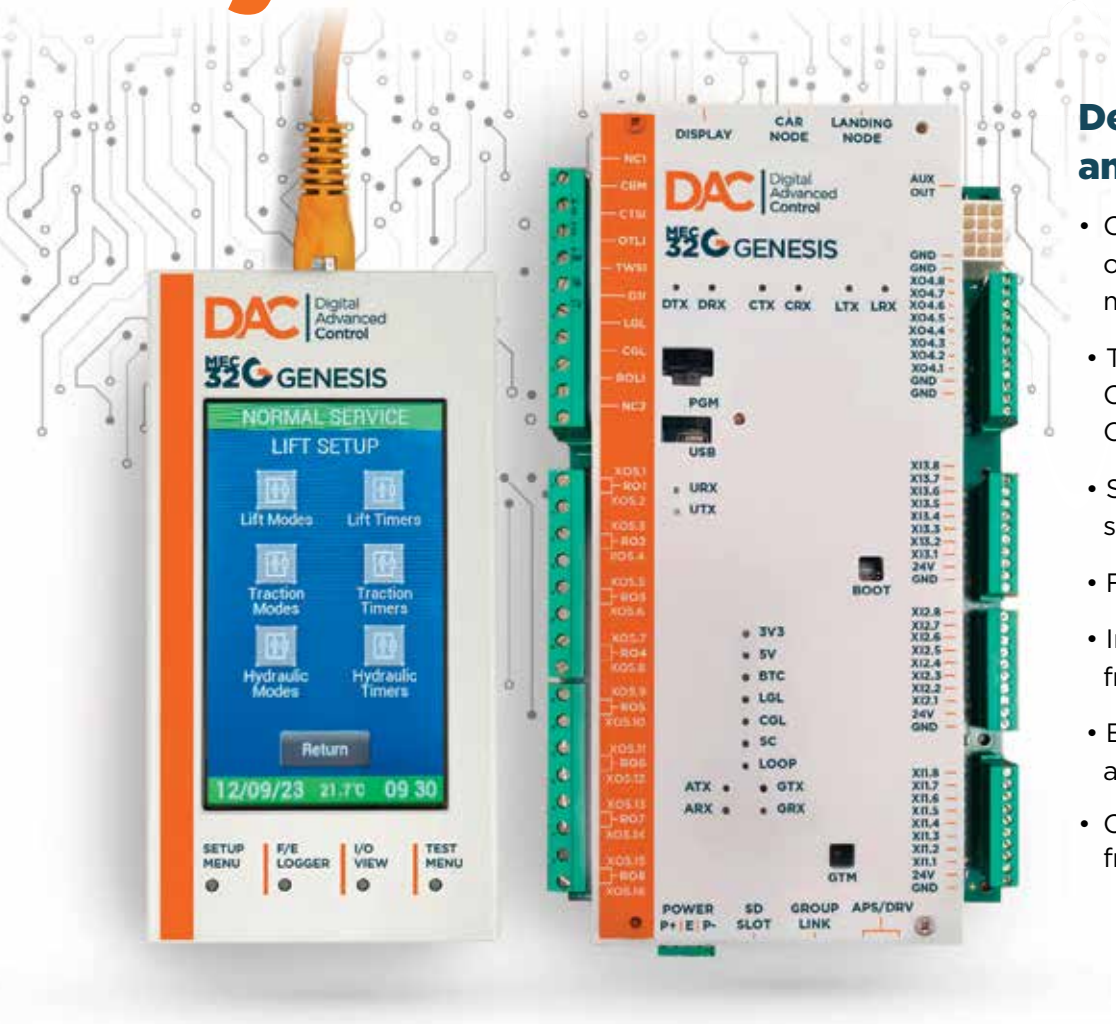
Thank you to all The Lift Industry Karting Challenge sponsors, donors & participants

Charity Registration No. 1119434

DAC Digital Advanced Control

MEC 32 GENESIS

Split-MRL Control System solutions



Designed, developed and delivered by DAC

- Control of existing machines or the supply of new retrofit machine types
- The Replacement of ageing Control Systems with an Open Protocol design
- Slack / Broken belt detection systems available
- Full Serial Connectivity assured
- Industry-leading user front interface
- Bespoke cabinet dimensions are available
- CANopen control interface from processor to drive

Andrea Preece
andrea.preece@dac-group.co.uk
07936 937 527

Chris Berry
chris.berry@dac-group.co.uk
07702 202 124

Lionel Hutt Director
Lionel.Hutt@dac-group.co.uk
07842 416 617

Contact Andrea or Lionel to arrange a tour of our 18000 sqft factory

DAC Factory Phoenix House, Lamport Drive, Heartlands Business Park
Daventry, Northamptonshire NN11 8YH

01327 879 334
www.dac-group.co.uk

Introducing our NEW
CODE-COMPLIANT LIFT EVACUATION SYSTEM

Our Lift Evacuation System is code compliant. **Is yours?**

- Fully aligned with **BS EN81-72 and BS 9999 standards**
- Featuring distinctive code-compliant **red and white pictogram**

To learn more:
info@tvcl.co.uk | www.tvcl.co.uk | 01352 793 222

LONDON & SOUTH
Brian Appleby
07786 628239

LONDON & SOUTH
Paul Jackson
07900 240086

NORTH, MIDLANDS, IRELAND & SCOTLAND
Lorraine Morgan
07900 240092

tvc
A VANTAGE Company