Editorial

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On this 4th of July 2021, the end of the Covid-19 pandemic seems to be on the horizon. This is not yet the end of this crisis; but thanks to the relentless efforts of the public health workers and the dissemination of the SARS-CoV-2 vaccines, the world is slowly reopening.

I believe this comes as a relief for the members of the broader transportation community. Our industry has been harshly impacted. At the same time, it has been on the front line from the beginning, moving goods and people throughout the pandemic, including vital medical supplies. Planes, trains, boats and ground vehicles have evacuated patients from remote locations to larger medical centres. The worldwide vaccination campaign would not be possible without the unique high-speed long-range mobility provided by aviation. Transportation is also a key to recovery, as it is reuniting families, connecting people to good-paying jobs, providing opportunities to communities, and helping ‘jump-start’ the economy.

Transportation professionals shall not lose sight of the opportunity to build back stronger that this recovery period is offering. First, we need to learn from this pandemic. Covid-19 is not the last public health crisis our civilisation will have to overcome. We shall gather together to identify lessons learned as well as enhance practices to make our transportation systems more resilient to epidemics and pandemics. Furthermore, this is also a chance to promote more efficient, inclusive and sustainable mobility – including through engineering standards. For instance, the *Manual on Uniform Traffic Control Devices* of the U.S. Federal Highway Administration (FHWA, 2021) is a great guidance for practitioners, but it provides a car-centric vision that prioritises vehicular speed and capacity over the needs of mass transit, micro-mobility and pedestrians. We need to fill these gaps that adversely impact safety and equity.

This issue of *Transport* includes seven items about traffic engineering, noise modelling, roadway safety, pavement, airport service quality and railway engineering, from researchers based all around the world, representing the diversity of our discipline.

Measuring the friction coefficient of roadways is vital for safety. Manually pushed devices might be preferred to traditional trailer- or vehicle-mounted sensors when the typical survey speed cannot be achieved due to the configuration or the topography of the road. However, these types of devices are not adequately covered by the technical literature. In their briefing, Stokes *et al.* (2021) present the results of field testing conducted with a manually pushed device to evaluate the correlation of these data with measurements performed with a trailer-mounted device. The authors discuss the repeatability of the test method and the influence of the survey speed on the results.

Sok and Lee (2021) developed a model to predict the temperature distribution in a newly built concrete slab using a transient one-dimensional finite-difference method. With this model, the authors evaluated the effects of climatic conditions, placement time, pavement thickness and concrete mix proportion on the built-in temperature difference (BITD). The results show that climatic conditions, placement time and concrete mix proportion have substantial effects on the BITD, whereas pavement thickness has only a minor effect.

Most large cities face noise pollution issues, but not all cities are equal when it comes to the vehicle fleet mix that generates that noise. In Tehran, Iran, motorcycle traffic has a significant contribution to the overall vehicular noise. Mansourkhaki *et al.* (2021) studied the equivalent sound pressure levels alongside highways. They evaluated the Iranian traffic-noise-prediction model for highways (IR-TNM) based on these data. This work revealed a difference between the results of the model and the values gathered in the field. They suggest that this difference may come from the fact that the IR-TNM does not consider motorcycles on highways. They modified the model to better account for this traffic, which reduced the discrepancies with the observed data. On the matter, Chang *et al.* (2012) as well as Sheng *et al.* (2015) conducted comparable work, respectively in Taichung City, Taiwan and Macau, to improve the modelling of noise pollution from motorcycle traffic.

Kazemzadehazad *et al.* (2021) validated a driving simulator for mean speeds in curves based on vehicle speed measured along corresponding real-world curves. A two-lane rural road in a mountainous area was modelled, and the driving speeds on the simulator were collected for analysis, in parallel with driving speeds in the field with a radar gun. The typical speed profile along the curve is similar in both experiments. Further reading on speed models for two-lane rural highways is available in the *Transport* paper by Castro *et al.* (2012).

This issue of *Transport* features two articles on the evaluation of airport service quality. Rolim *et al.* (2021) developed a method to evaluate determinant factors on the level of service (LoS) at the check-in. Their approach aims to recognise the influence of operational procedures and demand growth on the LoS on this section of the passenger journey. The authors collected and analysed data at São Paulo–Guarulhos international airport (GRU), Brazil. The findings suggest that the processing time at the check-in counter is the most important factor, followed by the number of counters per air carrier, the availability of self-service technologies and the time the check-in counters open.

Zhou *et al.* (2021) propose a multi-criteria decision-making approach, combining the ‘analytic hierarchy process’ (AHP) and the ‘technique for order preference by similarity to ideal solution’ (Topsis) for the quantitative assessment of airport service quality. According to the authors, the deficiencies of previous criteria were mitigated through the establishment of a criteria hierarchy with quantitative indicators. Four large hub airports in China were used as case studies for evaluating the proposed criteria system and method. They used the results of this evaluation for suggesting targeted measures that could improve the LoS at these airports.

Last is a discussion on ‘Prospects in elongation of railway transition curves’ by Chrostowski *et al.* (2020) based on a contribution by Kaewunruen (Chrostowski *et al.*, 2021). The original article discussed an elongation of existing transition curves during railway track renewal to improve the allowable maximum speed and ride comfort. The contributor suggests that the consideration should also embrace a system thinking approach, whether it is a semi-green or brownfield project.

Transport and its authors are eager to receive the valuable comments of their readers. You can provide discussion on the papers or send comments to journals@ice.org.uk. Authors are also welcome to submit papers online for consideration; full details can be found at <https://www.icevirtuallibrary.com/page/authors>.

On behalf of the Institution of Civil Engineers and the editorial panel of *Transport*, I would like to thank the authors for sharing their findings with the transportation community,

and our reviewers for contributing to ensure the quality and integrity of this peer-reviewed publication.

Finally, I would like to bring to the attention of our readers that the 101st annual meeting of the Transportation Research Board (TRB) will be held in person next January in Washington, D.C., USA. The TRB annual meeting is not less than the most attended event in transportation engineering and research in the world. Researchers are invited to submit papers for consideration by the 1st of August 2021.

I wish a happy and healthy summer to you and yours.

REFERENCES

- Castro M, Sánchez JF and Sánchez JA (2012) Operating speed models for two-lane rural highways. *Proceedings of the Institution of Civil Engineers – Transport* **165**(2): 107–118, <https://doi.org/10.1680/jtran.2012.165.2.107>.
- Chang TY, Lin HC, Yang WT, Bao BY and Chan CC (2012) A modified Nordic prediction model of road traffic noise in a Taiwanese city with significant motorcycle traffic. *Science of The Total Environment* **432**: 375–381.
- Chrostowski P, Koc W and Palikowska K (2020) Prospects in elongation of railway transition curves. *Proceedings of the Institution of Civil Engineers – Transport* **173**(5): 309–320, <https://doi.org/10.1680/jtran.17.00097>.
- Chrostowski P, Koc W, Palikowska K and Kaewunruen S (2021) Discussion: Prospects in elongation of railway transition curves. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 279–280, <https://doi.org/10.1680/jtran.18.00081>.
- FHWA (Federal Highway Administration) (2021) *Manual on Uniform Traffic Control Devices (MUTCD)*. U.S. Department of Transportation, Washington, DC, USA. See <https://mutcd.fhwa.dot.gov/> (accessed 12/07/2021).
- Kazemzadehazad S, Monajjem S, Larue G and King MJ (2021) Driving simulator validation for speed research on curves of two-lane rural roads. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 248–253, <https://doi.org/10.1680/jtran.18.00033>.
- Mansourkhaki A, Haghiri M and Berangi M (2021) A modified noise-prediction model for highways with significant motorcycle traffic. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 239–247, <https://doi.org/10.1680/jtran.17.00117>.
- Rolim PSW, Correia AR and Borille GMR (2021) A method to evaluate determinant factors on airport check-in level of service. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 254–266, <https://doi.org/10.1680/jtran.17.00017>.
- Sheng N, Xu Z and Li M (2015) The performance of CRTN model in a motorcycle city. *Mathematical Problems in Engineering* 2015: article ID 369620.
- Sok T and Lee SW (2021) A mechanistic approach to predict built-in temperature in concrete pavements. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 227–238, <https://doi.org/10.1680/jtran.18.00065>.
- Stokes J, Nassar AI and Wright M (2021) Briefing: Measuring pavement skid resistance – comparing manually pushed and trailer-mounted devices. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 221–226, <https://doi.org/10.1680/jtran.17.00059>.
- Zhou H, Li Y and Gu Y (2021) Research on evaluation of airport service quality based on improved AHP and Topsis methods. *Proceedings of the Institution of Civil Engineers – Transport* **174**(4): 267–278, <https://doi.org/10.1680/jtran.17.00087>.