

Coach trick

There can be few sectors of the economy that have been hit harder by the COVID crisis than coach operation, and yet few have received less government help. Operators discovered that they were not regarded as part of the tourism and leisure sector, so had to continue to pay business rates on their premises, while at the same time seeing pretty much all their work, from incoming tourism to educational trips, shut down. This lack of aid could not have come at a worse time, as coach operators had been investing heavily in new vehicles to conform to PSVAR and CAZ legislation, and many had to carry a significant financial burden as a result.

Now that the restrictions on travel have lifted, surviving operators are faced with another hurdle: restoring confidence in coach travel among a customer base that includes significant numbers of vulnerable people. Crowding together in the confines of a coach is not seen as an attractive proposition by many, and the operator obviously has a duty of care to do all that can be done to reduce the risk of travel.

On the other hand, we now know far more about how COVID may be transmitted than we once did. Andrew Carnegie, managing director of hospital airborne infection control specialists Air Sentry, explains how it spreads in confined spaces. "The main mechanism is microdroplets, which are generated when people sneeze, cough or talk loudly. Just one cough can generate



While reassuring potential travellers that coaches are safe to use remains difficult, some operators' survival may hang in the balance, says Richard Simpson

100,000 droplets. Large droplets fall to the ground within 60 seconds, but microdroplets can remain floating in the air for 20 minutes after a single cough in a closed room. They diffuse through the space like cigarette smoke."

REAL-WORLD EXPERIENCE

Droplets behave differently in coaches and buses, because the air in the saloon is more dynamic. A study that was published in China's peer-reviewed journal *Practical Preventative Medicine* (which has since been withdrawn for unstated reasons), explained what happened when an infected individual travelled on a 48-seat, long-distance, air-conditioned bus. "It can be confirmed that in a closed environment with air conditioning, the transmission distance of the new Coronavirus will exceed the commonly-recognised safe distance," the researchers wrote. CCTV showed the individual, who travelled in January, did

not interact with others on the four-hour bus ride, but 13 other passengers were infected, including two who were sitting six seat rows in front of the infected person.

The initial carrier then got on another bus, where the virus infected two others, also sitting about 15 feet away, they said. And a passenger who got on the first bus about 30 minutes after the carrier and other infected individuals had alighted also caught the virus.

The authors speculate: "The possible reason is that in a completely enclosed space, the airflow is mainly driven by the hot air generated by the air conditioning. The rise of the hot air can transport the virus-laden droplets to a greater distance." Conversely, passengers sitting the closest to the carrier escaped infection, as did all those who happened to be wearing masks.

Carnegie says that screens to confine droplets around passengers are 'very sensible' and are vital to protect drivers who must spend an entire shift in a vehicle. Combined with an overhead vent, the screen will help force airborne droplets down towards the floor.

But, he adds, there is no substitute for clean air. "Interior air needs to be changed five times an hour to prevent

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inhalation of an infectious dose. This can be done either through exchange with the outside, or through filtration. If the air is ultra-clean, you can only breathe in an infectious dose if someone coughs directly over you.”

His company is currently developing an air-cleaning product for coaches and buses, similar to those it already supplies to hospitals. It is of twin-outlet design to ensure that the driver always receives ultra-clean air, and its multiple element filter design has the added bonus of removing air pollutants such as PM 2.5s.

OTHER ADVICE

Vehicle OEM MAN recommends setting air-conditioning to fresh air mode, so air is not recirculated in the saloon. Irizar offers the Hispacold Eco3: an ioniser that can be attached to the air-con on any make of coach. Ionised air encourages droplets to fall out of suspension, and the extra oxygen atom in the ozone molecules generated has a propensity to bond onto viral cells and destroy them, it is said.

While airborne particles are the main route of infection, the virus can be picked up from surfaces and transferred via hand and face to the respiratory

tract. Thorough cleaning is vital, as the virus molecules themselves are so small that they can be easily missed if surfaces are not entirely wiped. Experience from the Indian railway system indicates that over-enthusiastic applications of liquid sanitiser to touch screens and microphones can cause these to malfunction, so care must be taken.

Widely-available cleaning agents such as household bleach are effective at destroying the virus, although coach operators will seek specialist anti-viral products that are less aggressive to sensitive surfaces. Some can be applied as mists which will cover the entire vehicle interior, and destroy the virus on hard and soft surfaces. Obviously, this involves taking the vehicle out of service while the process is under way.

Possibly the biggest issue now facing operators is restoring public confidence in coach travel, to its traditional position as one of the safest modes available.

National Express suspended its services for three months at the height of the crisis. It returned with a six-point plan in place, which includes:

- Enhanced cleaning, including interior ‘fogging’ in vehicles and coach stations
- Additional three-stage filtration on coach air-conditioning systems
- For social distancing, only window seats are in use, and passengers board from back-to-front and alight from front to back

- Contactless temperature screening of passengers prior to boarding
- Protective screens for staff, who are also issued with face masks, sanitisers and gloves
- A requirement for passengers to wear face masks/coverings.

Others have made different arrangements. Tour specialist Daish's Coaches has reduced capacity on its vehicles, so just 37 passengers travel on a 53-seat coach. The vehicles are deep-cleaned after every journey and undergo regular misting, with air-conditioning filters regularly cleaned. Coach toilets are not used, with extra comfort stops scheduled instead, and passengers must apply hand sanitiser every time they board or alight. Eating or drinking on board is not allowed.

Corporate specialist Ellisons Travel Services is trialling the Datik Covid Manager System, which incorporates a smart camera at the vehicle entrance. It takes less than two seconds to scan a prospective passenger's face, and if they are showing signs of a temperature or are not wearing an appropriate face covering, they will be refused entry. It does not store any images or data. [IE](#)

