Smart Floor - New Loadspace feature for Range Rover

By Jaguar Land Rover | Category: Design Honour

Smart Floor is a new load space feature for L460, providing the dual functionality of a load space partition and a backrest (for customers sitting on the lower tailgate). The concept was derived from an internal innovation event run by the Customer Focussed Innovation (CFI) Team and has since been developed to "Application Readiness" by CFI. The feature has generated 3 patents, offering core functionality for "Tailgate Event Experience," a key USP for L460. The feature has been praised by the Programme Director as one of the most developed and innovative features on the programme, received very positive feedback from customer research clinics and described by JD Powers as "the most important new feature for L460".

The Innovation

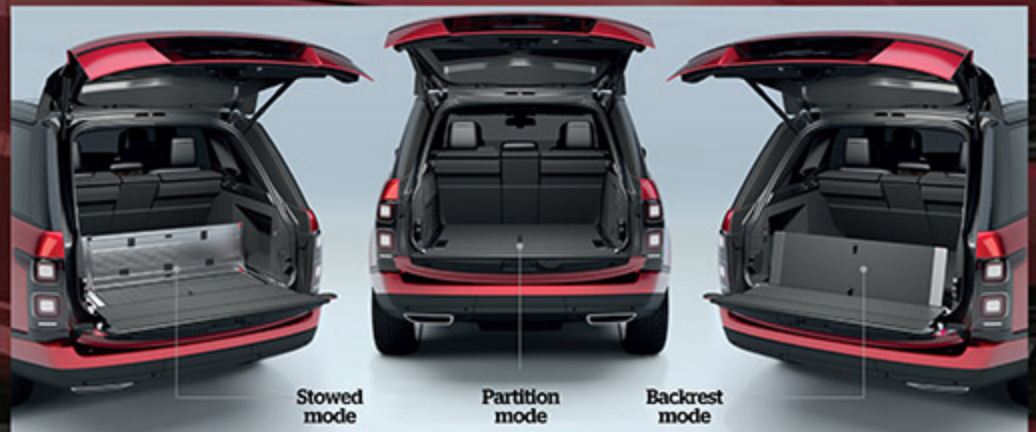
Smart Floor is a load space feature comprised in essence of a lower 'tray' and a single, configurable 'board.' The board moves within the tray to offer three modes:

Stowed – The Smart Floor is stowed flush within the load floor with the top surface finished in the same durable materials used in the load space (carpet and anodised aluminium), thereby maintaining normal functionality of the load space without compromise.

Partition – The Smart Floor is raised into the partition mode, separating the front and rear portions of the load space. Everyday items such as shopping or small bags can be retained nearer to the customer when they are accessing the load space.

Backrest – The Smart Floor is raised into an angled backrest position to support customers when seated on the lower tailgate. Enhancing the customer use case that is seen with the current Range Rover of users sitting on the lower tailgate to change shoes, watch events, etc.

The team placed a great deal of importance not just on innovation, but on a collaborative working approach, and interfaced extensively with all key stakeholders to deliver the best possible feature and ensure a smooth transition into the vehicle programme.



Overcoming Challenges

Design of a mechanism that was packaged within 20mm and provided both positions whilst also withstanding high loading was a challenge. The mechanism was required to operate smoothly even after the application of contaminants, and retain all positions effectively with intuitive interaction for the user. This phase required many design reviews, developing new ideas and fine-tuning the details to ensure the best functionality. Several physical prototypes were also built to test the feature and enhance the development process. Maintaining the strength of components within such a small package required very careful geometry design and material selection, as well as tactically placed support structures, an extensive CAE study was critical to this process.

Impact of the Innovation

design patents filed

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