ULTRA PRT Supplier's Response

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Here is the response to our recent article critical of the PRT vehicle design by ULTra, the supplier of the personal rapid transit system at Heathrow Airport These comments are by Dr. Torquil Ross-Martin of ULTra, the system's lead designer (via Steve Raney). Of course, we will have a followup article on this topic within a week or two, after we complete more research on the topic of aluminum vehicle designs.

We have designed our vehicles to ensure that their fatigue life exceeds that which will be encountered in 8 years service - given maximum levels of use. In fact, the need to do this was a major factor in our decision to design a complete new vehicle rather than adapt an existing design.

There is no particular difficulty in doing this with aluminium structures when the loads that they will encounter is well known - the proof flies above us every day.

Now one of the significant advantages that PRT vehicles have over road vehicles (from an ease of engineering perspective) is that the loads they will encounter are precisely known. We know the roughness of the guideway, the speed around the corners, how hard we will brake, the maximum possible payload etc. Essentially everything. And we control it. So we can do these calculations precisely, just like aeroplane designers do, so the vehicles WILL NOT FAIL.

Pity the poor van or car designer. He/she has to rely only on statistics - the worst case owner won't overload their van by more than so much, they won't pound up and down kerbs at speed more that X times a day, their regular road won't have more than Y big potholes per mile....

Little wonder he/she tends to stay away from aluminium, (although you should note that aluminium suspension components are increasingly common as manufacturers strive to improve performance and reduce weight).

And no surprise that, should you abuse your car or van more than the designer allowed for, it will prematurely fail.

Something that properly designed PRT won't do, because it isn't subject to driver abuse.