

Winged mirror

Patrick

Existing wing mirrors are ugly, hard to adjust, aerodynamically bad news -and they cost the earth when sideswiped by some white van on the 3:30 pub rush.

Why not use a UAV, a small remote controlled helicopter which could carry a mirror or webcam and relay images direct to the driver? This could be stabilised against vibration and even zoom in on suspected trouble spots ahead. No more dangerous blind spots or invisible dips in the road. When you want to park, the mirrorbot would help guide you in and then dock itself safely within the vehicle bodywork.

Mark

I agree with you that wing mirrors have their problems, but they also have positive aspects. I find them useful for judging tight spaces, in the same manner as whiskers do for cats. Also, it may be a conditioning thing, but they can add some character to the car. Consider a dog, or a prominent Royal, without ears it would just not look right. That said, one problem that you have missed, is the blind spot on the driver's side. I know this from experience, as I once punched a cyclist in the side of the face accidentally (honest), when my indicators failed and I started to use hand signals.

Patrick

Exactly what 'hand signals' were you using?

I really like the idea of whiskered cars. I have been known to 'park by touch' myself sometimes. As for the aesthetic argument about ears, all I can say is that any car I've ever owned quickly looked like it had been nibbled by Mike Tyson.

Mark

By identifying the positive elements of wing mirrors, it does not mean I am rejecting your idea. In fact, you have established that there is a problem that needs a solution, which is half the battle, but it has to be the best solution.

Patrick

Wouldn't you agree that demanding perfection, ie a 'best' solution, sometimes inhibits more speculative thinking and may even make

smaller scale innovation seem hardly worth the effort? I'm certainly with you, though, on the need to seek ambitious new products.

Mark

Your 'eye in the sky' or is it more 'pie in the sky' remote control helicopter idea, though technically possible, is not practical. I mean, who would control it? I suspect it would keep the kids entertained but drivers would not be happy filling two tanks and what about that irritating buzz (the helicopter, not the wife you understand)! With all due respect, I need to get you back down to earth quickly and let the future manned aerial vehicle MAV manufacturers worry about this quandary another day.

Patrick

That's just it, the technology is all here, right now. We could build a small helicopter, fed with fuel from the main tank. It could be free to roam to all necessary viewpoints whilst being prevented from disappearing over the horizon by a tether of limited length. As for buzz...yes! we could turn a whole new generation of kids off those seatback DVD's and back onto engineering-as-entertainment. I reckon that a radio controlled helicopter would be easy to keep in the right place, given that autonomous, ground hugging missions are now being flown by military UAV's. I can remember the first time I saw a Chieftain tank on rough terrain, its gun staying locked onto a distant target. . . pure magic.

Remember too that we can cope perceptually with a fair degree of mirror motion relative to the driver: it's vibration, caused by bolting mirrors to the bodywork, that makes the images hard to interpret.

Mark

For now your airborne solution is not practical, so we should look more closely at the car itself for an answer.

Patrick

Ok, I'm listening...

Mark

With all this talk about getting an aerial view, I wonder if there is a possible solution here. Use a wide angled lens webcam at the end of a now multifunctional sloping roof aerial (relating the image back to a monitor in the vehicle). This wide rigid (to prevent sway) aerial would automatically rise up or lower, to close, when the ignition is

turned on or off. It could, as it docked itself safely within the vehicles bodywork, on closing and whilst opening, automatically clean the camera lens, via a carefully placed rubber wiper blade - a road's 'cats eye' trick.

Patrick

I can see manufacturers being keen to sell highly overpriced replacement parts, but I do like the idea...even if it's not as inspirational (outlandish?) as my version. The original cat's eye patent is probably out of date, thankfully.

Mark

The above option is again technically possible, but may be a little indulgent and over engineered. My simpler, let's call it the 'Chameleon' (a reptile that is endowed with the anatomical equivalent of rear-view mirrors) solution is, to have two well positioned (up high near the front of the car sides, camouflaged by trim and in a fixed position) webcams relaying images back to two small, left and right of the steering wheel, dashboard monitors. Yes, I know that some expensive sport cars have a similar system for the rear view mirror, but I am not aware of any for the sides of a car. Anyway, why reinvent the wheel, if there is no point?

Patrick

I guess I'd just like to inject some drama back into automotive technology. Assuming the aerial design could be isolated from vibration, I much prefer it. Also, I'm not convinced that camouflaging the lenses would protect them from passing vandals. I once worked on a public information kiosk that took into account some people's apparent need to reduce anything shiny to fragments.

Mark

It is essential for the driver that the arrangement feels natural, to avoid visual overload or confusion. It would also bring the left car side view in much closer than conventional wing mirrors do.

It does seem to answer all of your problems with wing mirrors, but it would be expensive. Although, in time, the reduced drag ratio factor would save enough petrol consumption to pay for it many times over and it kills that white van man's wing mirror crusade in its tracks.

Patrick

My back-of-the-envelope calculation shows that petrol would need to be £10 per gallon to pay for this system within the life of the vehicle...so it's rapidly looking economically feasible!.

Maybe there's scope for having these lenses pop up from the bodywork when the engine starts - low drag implications, effective protection and just the suggestion of Porsche 928 headlamps...

Mark

As this solution is geared more towards new builds, we need to consider whom our customers are and how to get to them.

A patent search, carried out by the British Library, would help us see where we stand on prior art etc.

Patrick

We'll find it hard to get access to decision makers in Detroit or Stuttgart –pity there aren't many left in Birmingham or Luton. The next stage sounds like it might be costly and hard work...in any case, it seems the chameleon may have gobbled the fly's-eye.

Patrick comments are in italics