Heads-up for HUD tech

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While researching for this month’s Industry Focus on Automotive Electronics, I encountered an issue pertaining to infotainment I never considered: government regulation. It arose as I was asking questions about head-up display (HUD) technology. Industry trends are showing that caller ID, lights for speed, gas and warnings, radio station name, GPS maps, and other information may soon be displayed on the windshield. At the moment, HUD government regulations cover daytime and nighttime driver visibility, and distinct colors and symbology for warning lights (NHTSA 571.101 S5.3.3 through 571.101 S5.3.5).

HUD is strictly regulated in the aviation sector, but hardly at all on the automotive side. This doesn't make sense since far more people drive cars than fighter jets and have far less training. Aviation HUD technology can be used because there’s a lot of open space in the air, and pilots are trained to deal with the visual difference the technology provides the driver. There are already many distractions for automotive drivers, both inside the vehicle (i.e. passengers and music), and outside the vehicle (i.e. pedestrians and other drivers). The HUD information can be a lot for drivers to take in at once, and can easily distract if not properly placed.

It is true that most manufacturers adhere to unwritten rules, including putting information on the bottom third of the windshield and on the sides to prevent visual interference. However, drivers need to see more than just what's in front of them; peripheral vision is a key need while driving a vehicle, and having all of that information on the windshield at once can hinder a driver's peripheral vision. Time will tell how mainstream HUD becomes integrated in vehicles, but the government may see it as a potential danger — many accidents already occur without windshield interference. Tests conducted by automakers (i.e. Volvo and Corvette) have shown that drivers actually save time without looking down at an instrumental panel common in most vehicles.

However, I doubt that all of the information listed above was on display at the same

time. How much information is too much information? Having all the answers in front of you is convenient for the busy lifestyle, but there are other factors that deserve consideration before implementing HUD technology in all vehicles. In my view, the psychology of driving dictates that many people will keep looking down at their instrument panel since that's how they've been driving for their entire lives. Some information outside of the car is more important than the inside information; specifically, pedestrians entering the windshield view. In the event of an accident, where does the liability lay for damage due to HUD information blocking a driver's line of sight? The technology is supposed to aid drivers on the road, but with so much information potentially on display, will HUD technology distract the driver too much?

What are your thoughts on the up-and-coming HUD issue? Do you feel that HUD technology will catch on in the mainstream? Let us know!

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