

Creating a Sound Environment

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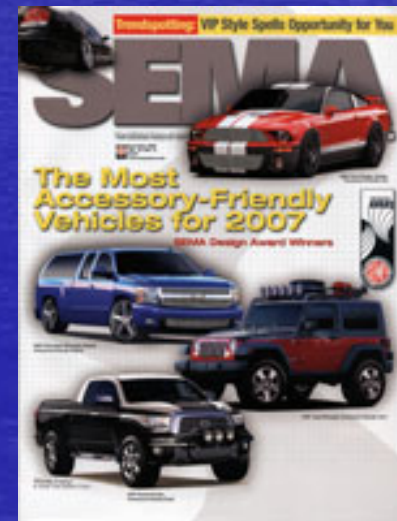
DOUG NEWCOMB, Automotive Journalist

- Former Editor of Car Audio and Electronics (1989-1997) and Car Stereo Review, Mobile Entertainment, Road & Track Road Gear (1997-2005).



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- Contributor to Road & Track, Sound & Vision, E-Gear, SEMA News, Rolling Stone, Men's Journal, Playboy and more.



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- Frequent guest on Sound & Vision Radio and Road & Track Radio



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Auto Tech writer for MSN Autos

The image shows a screenshot of a web browser displaying an MSN Autos article. The browser's address bar shows the URL: <http://autos.msn.com/autos/article.aspx?storyid=402476>. The MSN Autos logo is visible at the top left of the page. The article title is "AUTO TECH Review: Navigation Systems" by Doug Newcomb. The main text discusses the evolution of navigation systems, noting that modern systems provide more than just directions, including traffic updates and real-time information. It mentions that factory-installed systems have become more common in new vehicles, and that some systems now offer features like comparing gas prices and displaying traffic flow information. The article also mentions that some systems can detect potential problems on the road and suggest alternate routes. The page includes a sidebar with navigation options like "Find a Car" and "Find by Category", and a grid of related car images on the right.

msn autos

Auto News & Advice

AUTO TECH Review: Navigation Systems

Today, navigation systems are no longer a luxury or novelty and can be found in many cars.

by Doug Newcomb

Today's navigation systems do more than just tell you where to go. The next-generation nava will provide even more info on what to expect down the road.

Factory-installed navigation systems have trickled down from the luxury segment into more modestly priced vehicles. As many more vehicles benefit from the boon of many cars, the GPS games are less a novelty and more a necessity for any road warrior.

But only recently have navigation systems started to provide information on one crucial element that can turn a pleasant drive into a commuter's headache—traffic—although, "real-time" traffic information currently available isn't always relevant to your route at every turn.

The next generation of nav systems, however, promises to provide not only more details on demand and even personalized reports on what you can expect down the road, but also enhanced convenience features.

While current navigation systems can help you find a gas station, for example, next-generation ones will let you compare gas prices. "Until you have traffic information and other services, a navigation system is only useful when you don't know where you're going," notes Egon Schwanen, CEO, principal architect for TomTom's Research Group, Inc., which tracks the navigation industry. "But some of the newer services will change what will be required of the most advanced navigation systems."

Show Me the Traffic:
When GM Satellite Radio introduced its NavTraffic service in 2004, it wasn't the first attempt to supply real-time traffic information. But it was the first to display traffic flow information and show potential problems on a car's instrument screen. And, more importantly, offer alternate routes around gridlock.

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- A quiet car makes for a much better listening environment ... and some people will go to great lengths to get it!



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OEM on the Rise

- While the aftermarket still leads in innovation and time-to-market with new technology, such as iPod integration, that gap has narrowed considerably
- The level of audio quality in top OEM audio systems is now on par or in many cases surpasses the best the aftermarket has to offer.
- Plus, car buyers are being attracted by some of the well-known names of the home audio and car audio world.

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OEM on the Rise

Premium OEM Audio has experienced tremendous growth, which will continue.

- 80% of 2007 models for sale in the U.S. will offer “branded” audio as optional or standard equipment.*
- These include: Boston Acoustics (Dodge, Chrysler and Jeep), Mark Levinson (Lexus), ELS (Acura), Rockford Fosgate (Nissan and Mitsubishi), Alpine (Jaguar and BMW) and more to come.

*Source: Telematics Research Group

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Premium Branded OEM Audio Systems

'07 Acura RDX with ELS Surround



'07 Lexus LS 460 with Mark Levinson Reference Surround



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Without a quiet interior, the money spent on a premium system gets lost in the noise.

- Noise drowns out subtleties of music reproduction.
- Even some high-end cars with premium audio systems suffer from this problem.



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The Quietest Cars

Top Ten Vehicles: Overall Interior Quietness*

- BMW 3 Series (Total)
- BMW 5 Series (Total)
- BMW 6 Series (Total)
- BMW 7 Series
- Lexus LS 430
- Lexus GX 470
- Lexus SC 430
- Lexus LX 470
- Mercedes-Benz S-Class
- Mercedes-Benz CLS-Class

**Source: J.D. Power and Associates 2006 Automotive Performance, Execution and Layout Study (APEAL)*

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Even budget-priced cars are getting more sound deadening material, such as Scions and the new Dodge Avenger.



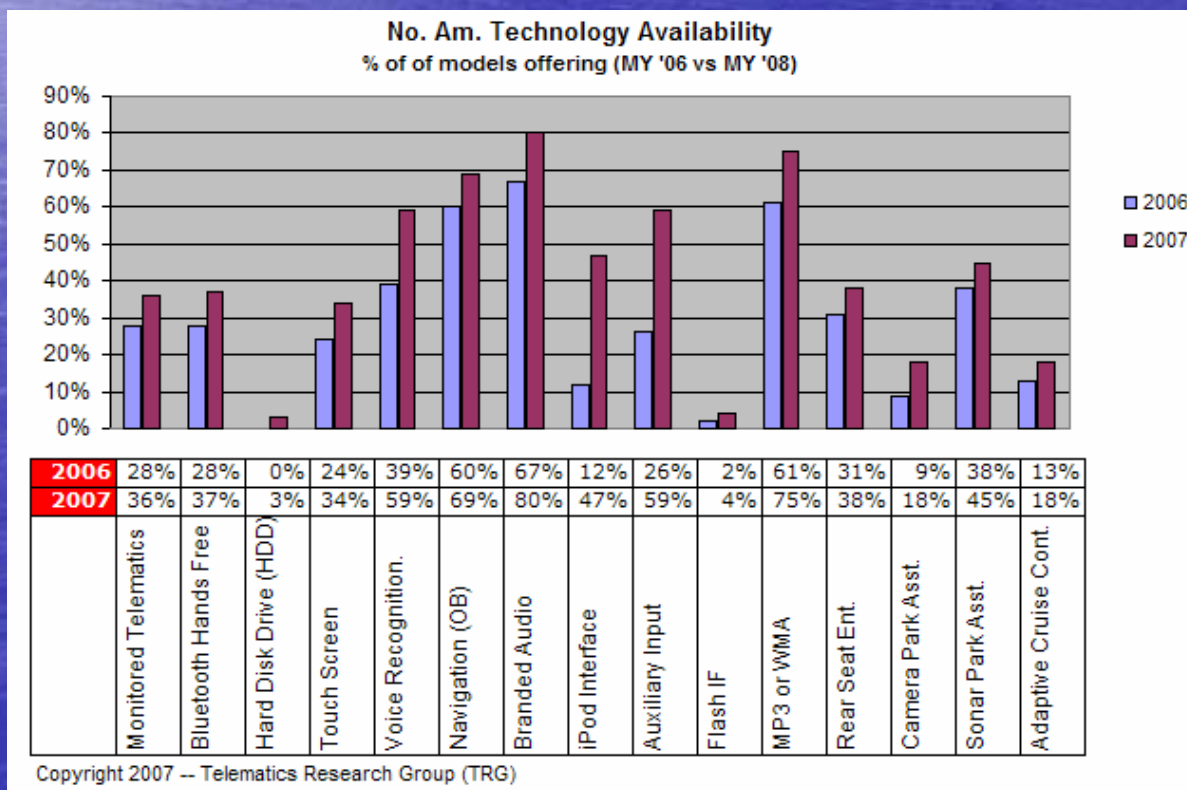
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But it's not only audio that requires a quiet vehicle interior. Other in-car entertainment and communication technologies that are becoming more important need a quiet environment to perform their best. These include:

- Bluetooth hand-free phone capability
- Navigation
- Monitored Telematics
- Voice-recognition controls
- Rear-entertainment video systems

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These in-car technologies are growing in importance as well.



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GROWTH OF BLUETOOTH HANDS-FREE

- 50% of average US consumers claimed to be “extremely familiar” with Bluetooth technology in a 2006 survey, as opposed to only 2% in a 2005 survey.
- Awareness and familiarity of Bluetooth technology among consumers has grown significantly, and this has resulted in Bluetooth becoming a feature consumers demand—rather than pushed by manufacturers.
- The Bluetooth automotive market grew an unprecedented 141% during 2005 when compared to 2004.
- The market for Bluetooth-equipped vehicles will grow at a compound annual rate of 27.1 percent from 2005 to 2010.

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GROWTH OF IN-DASH NAVIGATION

- In-dash navigation is now offered on 69% of 2007 models, up from 60% for the 2006 model year.*
- Portable Navigation Device sales have skyrocketed, cutting into sales of in-dash nav systems. But PNDs with turn-by-turn voice guidance still require a quiet environment to be effective.
- Real-time traffic technology will also increase the popularity of in-car navigation.*

Source: TRG, inc*

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GROWTH OF VOICE RECOGNITION

- Voice recognition for telematics, navigation and Bluetooth hands-free grew significantly in the 2007 model year and is now offered on 59% of vehicles—up from 39% last year.*

Source: TRG, inc*

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REAL-WORLD EXPERIENCES WITH VOICE RECOGNITION

Driving around town is one thing ...

... But driving on the highway is another.

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“A TALE OF TWO CARS”

The same stretch of highway on the same day in two very different vehicles:



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In the '07 Mitsubishi Outlander I had no trouble talking on the phone and using the voice-recognition feature.



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But in the '07 Infiniti M35x, the system couldn't understand me and I couldn't complete a call.



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In Conclusion ...

- Premium Branded Audio will continue to grow and become more important to car buyers—and so will a quiet interior that allow them enjoy the audio they paid for.
- In-car communication and entertainment electronics—Bluetooth hands-free, navigation, voice recognition, rear-seat entertainment—will also continue to grow, and these too need a quiet environment.

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It's up to the N&V engineers to ensure in-car technology has a "sound environment" in which to perform at its best.

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THANK YOU!

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ANY QUESTIONS?