



AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



2017 DODGE RAM 1500 EXPRESS®



Standard and Optional Features in the 2017 Dodge Ram 1500

○ Optional

● Standard

	Tradesman®	Express®	Lone Star®	Big Horn®
Android Auto				
Apple CarPlay				
Mobile App Support				
Text Messaging	●	●	●	●
Navigation			○	○
Touch Screen	○	○	●	●
Gesture Control				
Heads-Up Display				
Voice Commands	○	●	●	●
Console Control				

Additional trim levels available.

STRENGTHS

- Intuitive and simple audio-related voice commands.
- Phone-related buttons on the touch screen are clearly labeled.

INFOTAINMENT SYSTEM* DEMAND RATING

High Demand



The Dodge Ram 1500 Express' Uconnect® infotainment system placed high demand levels on drivers using it for phone calls, audio entertainment and text messaging. While interactions with the infotainment system in the Dodge Ram were typically short, drivers experienced high cognitive (mental) and visual (eyes-off-road) demand. The system could benefit from a larger screen and a more natural sounding voice.

ABOUT THE STUDY

Researchers evaluated 30 new 2017 vehicles' infotainment systems* to measure overall demand** placed on a driver when using voice command, touch screen and other interactive technologies to make a call, send a text message, tune the radio or program navigation, all while driving down the road.

WEAKNESSES

- Small touch screen makes dialing a phone number difficult to do without error.
- Robotic responses from the voice command system are difficult to understand at times.
- Placing calls using voice commands is a highly time-consuming task, likely due to the slow processing of the system.

* Infotainment System: Vehicle system that combines entertainment and information content

**Overall demand measured: visual (eyes-off road), cognitive (mental), and time-on-task

VEHICLE OVERVIEW: CONTROLS AND DISPLAYS



VOICE COMMANDS



STEERING WHEEL COMMANDS



INSTRUMENT CLUSTER



CENTER STACK

INFOTAINMENT SYSTEM

The Uconnect® Infotainment System offers the following features:

CALLING AND DIALING



Drivers can pair a phone with the infotainment system using the touch screen. Once a phone is paired, drivers can use voice commands or the touch screen to answer and place phone calls while the car is in motion. The phone menu is accessed via buttons in the center stack. Phone-related buttons on the touch screen are clearly labeled. Drivers can use the touch screen or voice commands to dial numbers and call contacts from the phonebook. No functions are locked out while driving.

Drivers in the on-road study experienced short interaction times when using the center stack, but at the cost of very high visual (eyes-off-road) and cognitive (mental) demand. Researchers[^] found the small touch screen makes it difficult to use, especially when trying to call a contact. With such a small surface area, the touch screen only displays four contacts at a time, requiring the driver to use multiple button presses to scroll through the phonebook.

Phone functions using voice commands lasted an average of 27 seconds[♦] and imposed very high cognitive (mental) demand. Researchers[^] commented that phone-related voice commands were natural and intuitive, but the system demonstrated slow processing times and spoke in an unnatural robotic voice that was at times difficult to understand.

The Dodge Ram's calling and dialing functionality placed high demand on drivers. The system could greatly benefit from a larger screen and a more natural sounding voice system.

TEXT MESSAGING



While the vehicle is in motion, drivers can only access text messages through voice commands. When the vehicle is not in motion, text messaging functions are also accessible through the touch screen from within a phone submenu. With voice commands, drivers can listen to text messages and send replies, choosing from a list of 18 predefined responses, which the synthetic voice reads aloud one at a time. The system requires drivers to say a contact name or phone number and then select a predetermined message to send.

On-road data showed using the text messaging functions not only took participants an average of 45 seconds[♦], but also placed very high cognitive (mental) demand on them. Researchers[^] remarked that as drivers must choose from a list of 18 replies that are read aloud, they may experience difficulty remembering all of the options listed.

The system requires a multi-step process and placed very high demand on drivers. Drivers are advised to use this function while the vehicle is not in motion.

[^]Researchers with expertise about how humans interact with technology evaluated the usability of the infotainment system in stationary vehicles.

[♦]Compared to a recommended maximum of 24 seconds



The Dodge Ram's audio entertainment system offers: AM, FM, and XM radio; Bluetooth and USB audio; and input from an auxiliary jack. Drivers can access audio entertainment using the touch screen, accompanying center stack buttons, and voice commands. Functionality is not limited while in motion.

On-road data showed using the touch screen placed high demand on drivers, even with relatively short interaction times, as visual (eyes-off-road) and cognitive (mental) demand levels were very high. Researchers[^] noted the smaller screen felt visually cluttered, which led to occasional errors.

Drivers were able to use voice commands to control audio quickly, although they also experienced very high levels of cognitive (mental) demand and high levels of visual (eyes-off-road) demand. Researchers[^] found the audio-related voice commands simple and intuitive, but the robotic voice was sometimes difficult to understand.

Audio entertainment functions in the Dodge Ram generated moderate demand overall. They were completed relatively quickly, but at the cost of high visual (eyes-off-road) and very high cognitive (mental) demand. Drivers may have benefitted from a more pleasant voice interaction and larger display.

[^]Researchers with expertise about how humans interact with technology evaluated the usability of the infotainment system in stationary vehicles.

VEHICLE CONTROLS AND DISPLAYS

VOICE COMMANDS



The Ram comes equipped with a voice command system that lets drivers give voice commands to access audio entertainment and phone integration. Drivers can activate the voice command system by pressing one of two designated buttons on the steering wheel: the voice command button provides access to audio, while the phone button provides access to phone functions.

INSTRUMENT CLUSTER



The Ram 1500's instrument cluster, located behind the steering wheel, has a 3.5-inch digital display, surrounded by four physical dials and gauges. Drivers can access the digital display by pressing buttons on the steering wheel.

STEERING WHEEL CONTROLS



The steering wheel has 12 dedicated buttons that provide access to voice commands, phone, cruise control and the cluster display.

CENTER STACK



The center stack features a 5-inch touch screen with audio entertainment, media and vehicle settings options as well as phone integration. The touch screen is surrounded by 10 buttons that give access to touch-screen controls. Also found in the center stack are two dials to control audio volume and radio tuning.

VEHICLE SALES SUMMARY

The 2017 Dodge Ram 1500 is the third best-selling vehicle in the United States, with 489,418 vehicles sold in 2016¹.

¹Market share data refer to entire Ram pickup model range. Source: goodcarbadcar.net; <http://www.goodcarbadcar.net/2017/01/usa-2016-vehicle-sales-by-model-manufacturer-brand.html> 01/06/2017