



AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



2017 DODGE DURANGO GT

INFOTAINMENT SYSTEM* DEMAND RATING

Very High Demand



The 2017 Dodge Durango GT with Uconnect® 8.4 NAV infotainment system imposed very high demand on drivers in the on-road study when used for phone calls, text messaging, audio entertainment and navigation. While drivers were able to quickly place calls and make audio selections, doing so required very high visual (eyes-off-road) demand.

Standard and Optional Features in the 2017 Dodge Durango

	SXT	SXT Plus	GT	Citadel	R/T
○ Optional					
● Standard					
Android Auto					
Apple CarPlay					
Mobile App Support			●	●	●
Text Messaging	●	●	●	●	●
Navigation			○	●	●
Touch Screen	●	●	●	●	●
Gesture Control					
Heads-Up Display					
Voice Commands	●	●	●	●	●
Console Control					

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.

STRENGTHS

- The voice command system processes commands quickly with high accuracy.

WEAKNESSES

- Sending text messages using the voice system requires very high cognitive (mental) and high visual (eyes-off-road) demand for an extended length of time.
- The center stack navigation menu is overly complex and confusing.
- Searching through the phonebook on the center stack places very high mental and visual demand on drivers.

* 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® In-Vehicle Infotainment System offers the following features:

CALLING AND DIALING



The Durango's Uconnect® infotainment system is capable of calling contacts and dialing phone numbers via the center stack touch screen and voice command interfaces while driving. Steering wheel buttons provide quick access to call pickup and hang up. To pair a phone, drivers can follow the straightforward prompts that appear when accessing a phone-related menu option. Once a device has been paired, drivers have full access to the contacts list and dial pad on the touch screen while the vehicle is in motion. As a safety feature, the touch screen's phone menu offers an optional "Do Not Disturb" feature that automatically blocks all incoming calls and text messages.

Placing phone calls using the Durango's calling system imposed high demand on drivers in the on-road study. Calling and dialing using the touch screen resulted in very high visual (eyes-off-road) and cognitive (mental) demand and took an average of 20 seconds♦ to complete. Researchers^ noted the overall cluttered layout of the phone menu, which may have played a role in task duration times. Additionally, the default color scheme provides low contrast between the background and the buttons, making it difficult to pick out desired selections.

Drivers took 25 seconds♦, on average, to place calls using the voice command system. Moreover, the process led to both high visual (eyes-off-road) and cognitive (mental) demand, pulling drivers' eyes and minds away from the driving task. Placing calls using voice commands requires drivers to select between two potential voice activation buttons on the steering wheel, with icons that do not clearly indicate their functions. Once correctly activated, the voice system offers an efficient one-step method to call contacts and dial phone numbers using flexible commands. However, instructions and responses from the voice system are often verbose and can pull the driver's attention away from the road.

TEXT MESSAGING



Drivers can send and reply to text messages using voice commands or the center stack touch screen when a device is paired with the Durango's infotainment system. While the vehicle is in motion, the touch screen can be used only to listen to messages; the voice command system is used to send one of the 18 predefined messages.

Overall, using the Durango's text messaging system placed very high demand on drivers. When sending new messages to contacts using voice commands, drivers were faced with very high cognitive (mental) demands for an average of 59 seconds♦. The extensive, multi-step text messaging process was likely due to the 30-second text message introduction—which can be interrupted—and increasingly verbose instructions. After selecting a contact, the voice system quickly reads out all 18 predefined messages available, without pause, and encourages users to interrupt the system when they hear the message that best suits their purpose. Listening to this auditory information requires great continuous concentration from the user.

Text messaging using the touch screen resulted in very high visual (eyes-off-road) demand during the brief 14-second interaction. The text messaging menu is simple and required few button presses to have messages read out loud. However, researchers^ noted that the layout of incoming messages is cluttered and presents information that may be irrelevant, such as date and time received. In addition, drivers must closely scan the phone menu to find the small text messaging button, which does not stand out against the phone-related buttons.

Researchers^ recommend against drivers using the Durango's system to send text messages while driving due to the very high demand requirements.

♦ Compared to a recommended maximum of 24 seconds

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

AUDIO ENTERTAINMENT



The Durango's audio entertainment system is capable of playing FM, AM, or XM radio, as well as audio through connected Bluetooth devices, auxiliary, USB, and SD cards. All audio controls are accessible via voice commands, the center stack touch screen and the steering wheel buttons while the vehicle is in motion.

Using either voice commands or the center stack touch screen to adjust audio led to an overall moderate demand on drivers. Drivers were able to quickly make audio selections on the touch screen, likely due to the simple audio menu. Commonly-used functions, such as audio source and radio presets, are present on the main menu, reducing the number of steps necessary to make audio selections. However, buttons are small and clumped together, instead of utilizing the large area of the touch screen. Though the audio menu itself does not contain distracting graphics, the default background graphics add visual clutter.

When using voice commands to play audio, drivers experienced very high levels of cognitive (mental) and high levels of visual (eyes-off-road) demand for an average of 20 seconds[♦]. The voice system is able to efficiently process a variety of conversational commands to tune the radio but requires a more rigid set of commands when accessing media connected via USB.

TURN-BY-TURN NAVIGATION



The Durango includes the Uconnect[®] native turn-by-turn navigation system, which allows drivers to search for and set destinations using voice commands and the center stack touch screen. Drivers can input addresses and search for points of interest by voice while driving. The touch-screen navigation menu offers a variety of destination categories though some search features are locked out while driving.

Navigation entry using the touch screen required drivers to search through a complex navigation menu. This took an average of 54 seconds[♦] and subjected drivers to very high levels of visual (eyes-off-road) and high cognitive (mental) demand. Information presentation is cluttered, using small buttons and text on each screen. There is a vast number of destination categories, submenus and list-sorting options that are all available while driving. To the system's credit, drivers cannot type in addresses while driving, although this restriction should be extended to using the category lists.

Using voice to enter navigation destinations took an average of 64 seconds[♦]. Drivers experienced high levels of cognitive (mental) demand as they processed exceptionally verbose usage instructions. Visual (eyes-off-road) demand was also high when inputting a desired location using voice, as drivers selected a desired option from long lists of destinations displayed on the touch screen.

Overall, the navigation system generated very high demand on drivers. Researchers[^] recommend against drivers using the Durango's infotainment system to program navigation while driving due to the very high demand requirements.

[♦] Compared to a recommended maximum of 24 seconds

[^] 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 Durango comes equipped with a voice command system that is activated by pressing one of two voice buttons on the steering wheel, depending on the desired function. In a highly unusual design choice, the phone button is used exclusively for phone functions, while the voice command button can be used for certain phone functions in addition to all audio entertainment and navigation functions, which can be confusing. Once activated, the voice system plays back an automated female voice and offers available commands on the center stack touch screen in small text.

INSTRUMENT CLUSTER



The cluster display, located behind the steering wheel, consists of a 7-inch full-color display with content controlled via buttons located on the steering wheel. The digital cluster display contains the speedometer and a host of menus offering vehicle state information and settings. Two familiar analog gauges lie on either side of the cluster display.

STEERING WHEEL CONTROLS



The steering wheel contains 19 buttons with 13 on the front and six on the back. Buttons on the left side provide access to the cluster display menus, the voice command system, and a few phone functions, while those on the right side are used for cruise control. Buttons on the back side of the steering wheel are raised and control audio entertainment and volume.

CENTER STACK



The center stack features an 8.4-inch touch screen with a customizable, static menu ribbon across the bottom, giving access to audio entertainment, navigation, phone integration, vehicle settings and climate control.

Climate control can also be adjusted using the 10 buttons and single dial located below the touch screen.

VEHICLE SALES SUMMARY

The 2017 Dodge Durango is the 13th best-selling vehicle in the midsize SUV segment (76th best-selling vehicle overall), with 68,474 units sold during 2016¹.

¹Source: Automotive News at autonews.com; Wall Street Journal at wsj.com – data updated to 2/25/2017.