



AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



2017 NISSAN ROGUE SV



INFOTAINMENT SYSTEM* DEMAND RATING

Very High Demand



The 2017 Nissan Rogue NissanConnect® infotainment system* placed very high demand on drivers in the study. The system is efficient for programming audio entertainment, but the complex and time-consuming phone and text messaging functions accessed by voice commands drove up the overall demand level.

Standard and Optional Features in the 2017 Nissan Rogue

- Optional
- Standard

	S	SV	SL
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.

ABOUT THE STUDY

Researchers evaluated 40 new 2017/2018 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, program audio entertainment or program navigation, all while driving down the road.

STRENGTHS

- The simplicity of the audio entertainment system on the center stack allows drivers to quickly make selections.

WEAKNESSES

- Reading and replying to text messages took an average of 71 seconds[‡] when using the voice command system.
- On average, drivers took 38 seconds[‡] to place a call.
- Drivers must parse commands into small segments, which lengthens task times.

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

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

‡ Compared to a recommended maximum of 24 seconds.

VEHICLE OVERVIEW: CONTROLS AND DISPLAYS



VOICE COMMANDS



STEERING WHEEL COMMANDS



INSTRUMENT CLUSTER



CENTER STACK

INFOTAINMENT SYSTEM

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

CALLING AND DIALING



Calling and dialing functions are accessible via the voice command system and steering wheel buttons. If no phone is connected and drivers attempt to begin a voice command interaction, the system will guide the user through pairing a phone using either voice commands or steering wheel buttons. Once a phone is paired, drivers can use voice commands to place calls to contacts or dial phone numbers. Alternatively, once a voice command interaction has been activated, drivers can use the steering wheel buttons to navigate through content on the center stack display. Phones cannot be paired while the vehicle is in motion, nor can previously paired phones be selected until the vehicle is in park.

Drivers were subjected to very high levels of overall demand when using the voice command system to place calls to contacts and dial phone numbers. On average, drivers took 38 seconds^o to place a call, while experiencing high levels of both visual (eyes-off-road) and cognitive (mental) demand. The extended interaction increased the overall demand to very high. This was due, in part, to the specific format requirements of the voice command system. For the system to successfully process a command, the user must parse a single command into a minimum of three short commands. To call a contact, users must provide the command “Call David Jones,” confirm “Dial” when prompted by the system, and then confirm a selection entry before the call is placed. While this method provides less room for system error, it ultimately placed higher cognitive and visual demand on drivers as they looked to the center stack for subsequent instruction after each step. The voice command system quickly recognized contact names with high accuracy and provided a list of available commands on the center stack display.

In an attempt to encourage drivers to keep their eyes on the road, the Nissan Rogue allows drivers to elect to scroll through the contacts list using the steering wheel buttons and have each contact read aloud. Researchers‡ remarked that this process is very time-consuming, especially as there is no way to jump ahead to different sections of the alphabet. Instead, the user must listen to each contact name read aloud slowly, one at a time.

TEXT MESSAGING



Using the NissanConnect® voice command system, drivers can connect a phone and send new text messages to contacts or read and reply to those currently in the inbox. Drivers can select one of five pre-defined messages. While the voice system is active, users can activate manual control of the center stack screen by use of the steering wheel buttons. Message contents are not displayed on the center stack screen while the vehicle is in motion.

Reading and replying to text messages placed overall very high demand on drivers and took an average of 71 seconds^o when using the voice command system. Drivers were subjected to very high levels of cognitive demand and high levels of visual demand. This was likely due to the dense visual prompts intended to guide users through the lengthy interaction. While the system supplements the list of options with auditory directions, several of the available commands are nonintuitive and do not match the options listed on-screen. For example, drivers must first use the “send text” command instead of the more intuitive and commonly used “reply” command.

Overall, researchers‡ found the steps necessary to send a text message too complex, demanding and time-consuming to be used while driving.

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

^o 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.



The Nissan Rogue NissanConnect® system provides access to standard audio sources: FM, AM and XM radio; CD; and USB, auxiliary and Bluetooth audio connectivity. As the screen is not touch-sensitive, users can access audio entertainment via the center stack physical buttons surrounding the display. Additionally, some functionality is available through steering wheel buttons.

The audio entertainment system imparted an overall moderate level of demand on drivers. Drivers were able to quickly complete tasks, taking only an average of 15 seconds[‡], but at the expense of very high cognitive and visual demand. Researchers[‡] noted that audio-relevant information is identified with familiar icons and labels, making it intuitive to guess each associated function. The tuning dial is responsive and can scroll through lists quickly with an accelerated scroll feature. However, researchers[‡] found that the small font on the display made it difficult to quickly read information. Buttons surrounding the display are small and have a smooth texture, potentially making them more difficult to press.

Overall, the audio entertainment menu utilizes a simple menu structure, which allowed users to quickly make selections. Despite the simplicity, there were still very high visual and cognitive demands due to the font design that was difficult to read quickly, noted researchers[‡].

[‡] 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 2017 Nissan Rogue SV comes equipped with a voice command system that allows drivers to access phone calling and text messaging. Once they activate the system by pressing the designated voice command button on the steering wheel, drivers can interact with the natural-sounding female voice. Available voice commands are listed out in a tiled layout on the touch screen and can be selected by using either voice commands or steering wheel buttons.

INSTRUMENT CLUSTER



The Rogue's instrument cluster is located behind the steering wheel and features a 5-inch LCD display, which drivers can access using steering wheel buttons. Standard gauges, such as the speedometer and tachometer, are located on either side of the display. The simple menu structure gives drivers access to vehicle settings and information, audio entertainment and advanced driver assistance systems (ADAS).

STEERING WHEEL CONTROLS



The steering wheel contains 16 buttons. Buttons on the left side give access to cluster display content and audio entertainment, and buttons on the right give access to cruise control, limited phone functions and voice command system activation.

CENTER STACK



The NissanConnect® center stack is equipped with a 5-inch full-color non-touch display with 18 buttons and dials for menu navigation. The multitude of buttons are clearly dedicated to audio functions and system settings. There is no home menu built into the structure.

Below the center stack display are an additional 11 buttons and dials for setting HVAC. Current HVAC settings are displayed on a small digital screen.

VEHICLE SALES SUMMARY

The 2017 Nissan Rogue is the fifth bestselling vehicle in the United States, with 403,465 sold during 2017 YTD.[§]