



# AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



## 2017 HONDA CIVIC SEDAN TOURING



## INFOTAINMENT SYSTEM\* DEMAND RATING

**Very High Demand**



The 2017 Honda Civic Sedan Touring's HondaLink® infotainment system placed very high demand on drivers using it for phone calls, text messaging, audio entertainment and navigation. The system would benefit from faster processing time, both for voice commands and touch-screen interactions, and a navigation system design that is consistent with the design of the rest of the system.

Standard and Optional Features in the 2017 Honda Civic

	LX	EX	EX-T	EX-L	Touring
○ 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

- Access to the touch screen dial pad is restricted while the vehicle is in motion.

## WEAKNESSES

- The voice system frequently misunderstands phone-related commands and processes them slowly.
- The voice system accepts only a rigid set of audio-related commands.
- The third-party navigation system is designed differently from the other HondaLink® functions and responds to a different set of commands.

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

## CALLING AND DIALING



The Honda Civic's system allows drivers to access calling and dialing functions via voice commands and the touch screen when a phone is paired via Bluetooth. The pairing process is simple and the touch screen offers full access to the phonebook to place calls to contacts while driving. The voice command system can be used to place calls to contacts and dial phone numbers while the vehicle is in motion. Some phone functionality, such as answering incoming phone calls, is accessible using steering wheel buttons.

Drivers using voice commands to access calling and dialing functions in the on-road study were met with high demand. Using this function to place calls to contacts took drivers an average of 32 seconds\* and imposed a very high amount of cognitive (mental) demand. The voice command system frequently misinterpreted commands, and vocal feedback from the system while dialing a number was slow.

While access to the touch-screen dial pad is restricted while the vehicle is in motion, drivers can still access the touch screen for calling contacts, which generates very high demand. Not only did drivers take a long time to place calls, but they were burdened with very high levels of visual (eyes-off-road) and cognitive (mental) demand. The menu structure of the phonebook requires multiple button presses to find a contact, which may be difficult to execute with the slow-to-respond touch screen.

The voice system's slow processing times and poor interpretation of commands in combination with the non-intuitive touch-screen phone menu design negatively impacted the calling and dialing system's overall performance. Overall, it placed very high demand on drivers.

## TEXT MESSAGING



Once a phone is paired, drivers can view text messages in their inbox and send replies using the touch-screen phone menu. While the vehicle is in motion, message content on the touch screen is not shown but instead read aloud by the system. To send a reply, drivers can choose from six predefined messages. The Civic does not support any text messaging function via voice commands.

On-road data for text messaging functions showed the system imposed very high demand on drivers. Interactions were drawn out and imposed very high levels of cognitive (mental) demand. The text messaging menu is a submenu hidden within the phone menu, which makes initially finding the function difficult. Additionally, the touch screen includes multiple animations during screen changes, slowing down interactions.

\* Compared to a recommended maximum of 24 seconds

## AUDIO ENTERTAINMENT



The Civic's audio entertainment system provides access to: AM, FM, and XM radio; CD; USB port; Bluetooth; auxiliary audio; Apple CarPlay and Android Auto; and Pandora, if installed on a paired phone. Drivers can access audio functions using the center stack, steering wheel buttons and voice commands, with some limited functionality also available via the instrument cluster display.

Voice commands for audio entertainment placed high demand on drivers in our on-road study. Drivers took an average of 29 seconds\* to complete tasks and were subjected to very high levels of cognitive (mental) demand. Commands to play songs from the USB device and to change radio stations are rigid and non-intuitive, hindering the usability of the voice system. In addition, the system frequently misunderstood commands, which extended interaction time.

Audio entertainment functions, when accessed via the touch screen, placed very high demand on drivers. Very high levels of visual (eyes-off-road) and cognitive (mental) demand were required from drivers to change radio stations and to play music selections from the connected USB device. Interactions were lengthy, as the touch screen was slow to load user selections. The music menus were cluttered with visual information, requiring extra time to sort through.

Accessing the Civic's audio entertainment via voice or the touch screen may be cumbersome and time-consuming for drivers, and overall the system places very high demand on them.

## TURN-BY-TURN NAVIGATION SYSTEM



The Civic's infotainment system includes the Garmin® turn-by-turn navigation system. Drivers can search for and set points of interest via the center stack and voice commands. The touch screen does not restrict any navigation functionality while the vehicle is in motion.

Drivers using voice commands to interact with the navigation system in the on-road study were met with very high demand. Not only did interactions take a long time to complete, but the process imposed very high cognitive (mental) demand and high visual (eyes-off-road) demand on drivers. The voice system for navigation behaves entirely differently than the rest of system. Accessing navigation commands takes multiple steps, as does simply trying to cancel route navigation.

Using the touch screen for navigation placed very high cognitive (mental) and visual (eyes-off-road) demand on drivers in the on-road study for extended lengths of time. The navigation menu has multiple pathways that lead to the same option, and a driver can easily get lost within the multiple submenus and categories; a button within one menu may unpredictably lead the user to different options within another. Excessive and non-intuitive categories to search exacerbate the poor performance of the navigation system via touch screen.

The Garmin® turn-by-turn navigation system had one of the lowest performance scores of vehicles tested in our study and placed very high demand on drivers. Based on the results of on-road testing, drivers are strongly advised to pull over before looking up directions.

\* Compared to a recommended maximum of 24 seconds

## VEHICLE CONTROLS AND DISPLAYS

### VOICE COMMANDS



The Civic has a voice command system that lets drivers place phone calls and adjust audio, as well as access turn-by-turn navigation, HondaLink®, voice settings and voice help. The Civic does not support text messaging via voice. Drivers can activate the voice system by pressing the designated voice command button on the steering wheel. Voice system status displays on both the instrument cluster and touch screen.

### INSTRUMENT CLUSTER



The Civic's instrument cluster, located behind the steering wheel, contains a 7-inch full color display, accessible via steering wheel buttons, and familiar gauges detailing vehicle status information. The display provides access to a menu of phone and turn-by-turn navigation controls, as well as vehicle status information and messages from Honda.

### STEERING WHEEL CONTROLS



The steering wheel has 17 buttons that control the instrument cluster, phone functions, audio entertainment and the voice command system. Its buttons also allow drivers to activate Adaptive Cruise Control and the Lane Keeping Assist System.

### CENTER STACK



A 7-inch full-color touch-screen display in the center stack provides access to the Civic's phone, climate, audio and turn-by-turn navigation menus, as well as vehicle information and a range of applications (including Apple CarPlay and Android Auto). It includes six touch-sensitive buttons along the left side of the screen that control audio and basic touch-screen navigation. Below the touch screen, 10 buttons and two dials control the vehicle's climate.

## VEHICLE SALES SUMMARY

The 2017 Honda Civic is the sixth best-selling vehicle in the United States, with 366,927 vehicles sold during 2016<sup>1</sup>.

<sup>1</sup>Source: Automotive News at [autonews.com](http://autonews.com); Wall Street Journal at [wsj.com](http://wsj.com) – data updated to 2/25/2017.