



AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



2017 HYUNDAI SONATA BASE

INFOTAINMENT SYSTEM* DEMAND RATING

High Demand



The Hyundai Sonata Base's Blue Link® infotainment system placed high demand on drivers. The voice system is quick and intuitive but could be improved with a simpler process for dialing phone numbers. The center stack screen menu offers quick access to core functions and the information is presented in a neat but cramped format.

Standard and Optional Features in the 2017 Hyundai Sonata

	Base	SE	Eco	Sport	Sport 2.0	Limited	Limited 2.0T
○ 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, the 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 system consistently processes phone and audio related commands accurately, allowing for quick interactions.
- Physical dials to control phonebook scrolling allowed for efficient contact selection.

WEAKNESSES

- Dialing a phone number via voice commands involved a multi-step process and required drivers to look at the screen for instructions or confirmation, requiring drivers to take their eyes off the road.
- Audio menus provide a large amount of information for drivers to visually search through and are presented on a small screen that exacerbates the eyes-off-road time.

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

CALLING AND DIALING



Drivers can pair a phone using the center stack while the vehicle is stopped. If drivers try to access a phone using voice commands while no phone is paired, the system automatically loads the phone-pairing menu. Once a phone is paired, drivers can call contacts using the voice command system and center stack, though numbers can only be dialed using voice commands. No functions are locked out while driving.

Drivers in the on-road study using voice commands to call contacts and dial numbers experienced high levels of demand. Dialing numbers required a multi-step process. Placing a call also required high amounts of cognitive (mental) and high visual (eyes-off-road) demand as drivers looked to the center stack screen for instructions and command confirmation.

Drivers in the on-road study experienced moderate levels of demand when using the center stack screen to call contacts. While calls could be placed quickly, drivers were still met with very high visual (eyes-off-road) and high cognitive (mental) demand when using the center stack. Tasks could be executed quickly, as a responsive dial helped drivers quickly scroll through the phonebook. However, scrolling through multiple pages of contacts required visual attention to be diverted from the forward roadway.

Overall, the calling and dialing system presented a high level of demand.

The Blue Link® calling and dialing system could be improved by reducing the number of steps required to make a call via voice and by simplifying the phonebook menu on the center stack.

AUDIO ENTERTAINMENT



The Sonata's audio entertainment system is accessible via steering wheel buttons, voice commands and the center stack. It offers: AM, FM and XM radio; CD player; USB port; Bluetooth; auxiliary audio; and the My Music application. The system displays the current audio selection on the center stack and the instrument cluster. No functions are locked out while driving.

Voice commands used to access audio entertainment created overall moderate demand on drivers in the on-road study. Voice commands were short and intuitive, as drivers were able to use natural commands to change radio stations and the audio source. While using voice commands to manipulate audio proved to have moderate visual (eyes-off-road) demand, interactions still generated high cognitive (mental) demand.

Drivers accessing audio entertainment via the center stack in the study were met with very high demand. While tasks were able to be completed quickly, they were associated with very high visual (eyes-off-road) and cognitive (mental) demand. The size of the screen is too small to comfortably display the amount of information accessible within a given audio menu.

The voice system processes quickly and understands a range of natural commands. In contrast, the center stack audio entertainment menu is non-intuitive, and drivers may experience more visual information than is necessary when changing sources or playing media. Overall, the audio entertainment system generated high demand.

VEHICLE CONTROLS AND DISPLAYS

VOICE COMMANDS



The Sonata comes equipped with a voice command system that gives access to phone functions and audio entertainment. Pressing the designated voice command button on the steering wheel activates the voice system, which plays back a synthetic female voice.

INSTRUMENT CLUSTER



The instrument cluster, located behind the steering wheel, features a monochrome display that contains menus for audio entertainment, settings, vehicle maintenance, and vehicle status. The screen is surrounded by familiar analog gauges.

STEERING WHEEL CONTROLS



The steering wheel has eight buttons and four switches that provide access to cruise control and the cluster display. It also has controls for audio entertainment, phone, and voice command system interaction.

CENTER STACK



The center stack has a 3.5-inch black-and-white digital display that drivers can use to access audio, calling and dialing. The display is controlled by the 18 physical buttons and two multifunction dials below it. Farther down the center stack, eight buttons and two dials control the vehicle's climate.

VEHICLE SALES SUMMARY

The 2017 Hyundai Sonata is the 22nd best-selling vehicle in the United States, with 199,416 vehicles sold during 2016¹.

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