



# AAA CENTER FOR DRIVING SAFETY & TECHNOLOGY



2017 FORD FUSION TITANIUM

Optional and Standard Features in the 2017 Ford Fusion

	S	SE	Titanium	Sport	Platinum
○ Optional ● Standard					
Android Auto		○	●	○	●
Apple Car Play		○	●	○	●
Mobile App Support		○	●	○	●
Text Messaging		○	●	○	●
Navigation		○	○	○	●
Touch Screen		○	●	○	●
Gesture Control					
Heads-Up Display					
Voice Commands	●	●	●	●	●
Console Control					

Additional trim levels available

## INFOTAINMENT SYSTEM\* DEMAND RATING

High Demand



The Ford Fusion Titanium SYNC® 3 (version 2.0) infotainment system generated high demand on drivers while using it for a variety of tasks, including placing phone calls, sending text messages and tuning the audio entertainment system.

## 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

- While the vehicle is in motion, drivers are locked out from reading and replying to text messages via the touch screen.
- Audio functions can be completed quickly.

## WEAKNESSES

- Drivers can access texting features, the dial pad and phonebook features with voice commands while the vehicle is in motion.
- Very high visual (eyes-off-road) demand was required to place calls via the touch screen compared to using voice commands.
- The center stack touch screen required very high levels of visual attention for placing calls and tuning audio.

\* 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 SYNC® 3 infotainment system offers the following features:

## CALLING AND DIALING



The SYNC® 3 system allowed drivers to make phone calls using voice commands or a touch screen, including answering incoming phone calls and hang-up capabilities using steering wheel buttons. To pair the phone, drivers go through a fast and intuitive process using the touch screen while the vehicle is not in motion. While a “do not disturb” feature allows drivers to reject incoming phone calls and send an automatic text message reply, the vehicle settings do little otherwise to limit phone functionality while in motion.

Calling and dialing in the Fusion generated overall moderate demand in the on-road study and using the center stack, drivers were able to complete tasks quickly. With moderate levels of visual (eyes-off-road) demand and high cognitive (mental) demand, the on-road data suggest that the voice system is less distracting to use than the touch screen, which requires higher demand, for calling and dialing contacts. Researchers<sup>^</sup> considered the voice system quick to interpret speech with a capable and intuitive command set.

Researchers<sup>^</sup> noted that although phone functions are easily accessible from the touch screen home menu, the small buttons of the dial pad are difficult to accurately press while driving.

Placing a call using either the center stack or voice recognition system is a short process. However, using the voice recognition system instead of the touch screen may help drivers keep their eyes on the road and result in lower overall demand.

## TEXT MESSAGING



Drivers can access the text messaging feature through voice commands and the touch screen. While the vehicle is in motion, users are locked out from reading and replying to messages via the touch screen. Instead, the system reads messages aloud. Additionally, voice system functionality is limited for text messaging, with drivers only able to reply to the first message in their inbox. The system allows drivers to reply to a message via voice using a list of 15 pre-defined responses.

Drivers took an average of 33 seconds<sup>♦</sup> to complete a texting task and experienced high visual (eyes-off-road) and cognitive (mental) demand. Researchers<sup>^</sup> found the voice commands for sending text messages difficult to grasp as on-screen voice prompts did not provide effective guidance. Additionally, when replying to messages, drivers are required to use voice commands to scroll through several pages of predefined messages, which has the potential to be time consuming.

Overall, users are advised against using the text messaging function while driving as it requires very high levels of demand for long periods of time.

## AUDIO ENTERTAINMENT



The audio entertainment system gives access to: AM, FM, and XM radio; a CD player; USB input; Bluetooth audio; Android Auto; Apple CarPlay and other third party audio applications, if present on the paired phone. Selections can be made while the vehicle is in motion via the touch screen and voice recognition, with limited access via steering wheel buttons.

On-road data showed accessing audio in the Ford Fusion generated overall moderate demand on a driver. Researchers<sup>^</sup> noted that the voice system accepted natural and flexible commands, allowing drivers to easily adjust the audio. Changing the audio source using voice commands was quick but was associated with high levels of visual (eyes-off-road) and cognitive (mental) demand.

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

<sup>♦</sup> Compared to a recommended maximum of 24 seconds

## AUDIO ENTERTAINMENT (CONTINUED)

Drivers using the touch screen to access audio entertainment were met with high cognitive (mental) demand and even higher visual (eyes-off-road) demand. While researchers<sup>^</sup> noted the main menu audio display on the touch screen is uncluttered with large and clearly labeled buttons, the USB media menu is contrastingly dense with an unconventional organization of submenus.

On-road testing found that accessing audio entertainment using voice commands generated high visual (eyes-off-road) demand while using the center stack generated very high visual (eyes-off-road) demand.

## VEHICLE CONTROLS AND DISPLAYS

### VOICE COMMANDS



Drivers can give voice commands to interact with a paired phone, change the audio selection, and adjust the climate inside the vehicle. Pressing the Voice Recognition (VR) button on the steering wheel activates the voice command feature and displays recommended voice prompts on the touch screen.

### INSTRUMENT CLUSTER



The instrument cluster, located behind the steering wheel, features a speedometer in the center, with a 4.2-inch LCD screen on either side. On the left, the LCD screen displays information about the vehicle's state, while the right screen displays the driver's audio and phone selections.

### STEERING WHEEL CONTROLS



The Ford Fusion Titanium has 22 dedicated buttons that control the cluster's LCD displays, and two gearshift paddles behind the wheel. Buttons on the left side let the driver scroll through different information displays on the left screen, while buttons on the right side give access to the audio, phone, and voice recognition controls displayed on the right screen.

### CENTER STACK



An 8-inch touch screen is the central point of command for the infotainment system, with access to audio entertainment, phone controls, third-party applications, climate control and system settings. It also displays the rear-view camera feed and parking sensor warnings when in reverse. Below the touch screen is a variety of buttons, housing Heating, Ventilation, and Air Conditioning (HVAC) controls, along with basic audio controls where drivers can adjust audio volume or skip to the next track.

## VEHICLE SALES SUMMARY

The Ford Fusion is the 13th best-selling vehicle in the United States, with 265,840 cars sold in 2016.<sup>1</sup>

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

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