Human Interface: What (almost) every button in an F-15C fighter's cockpit does

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Video directed by Morgan Crossley, edited by Ron Douglas and Brady Jackson. Motion graphics by Brady Jackson and Dylan Blau. Click here for transcript.
Welcome to the pilot episode of "Human Interface," a new series we're kicking off wherein we take you up close and personal with complex systems and have an expert explain what all the buttons and switches do. "Pilot episode" is particularly appropriate here, because we're kicking off the series with a look at a McDonnell Douglas F-15C Eagle, one of the world's most famous air superiority fighters. The F-15C and its variants are in service with multiple air forces around the world, including the United States, Japan, and Israel, and the aircraft has an outstanding combat record—across all its deployments and operators, air-superiority F-15s like the F-15C have racked up more than 100 air-to-air kills and zero losses.

Before the coronavirus made everything crazy, we were able to score some time with an F-15C on the flight line at Fresno Air National Guard Base in California. Our tour guide was Air Force pilot Colonel Andrea Themely, who retired in 2018 after

serving for 23 years. Col. Themely has about 3,400 hours piloting high-performance jet fighters and about 1,100 hours specifically in F-15Cs, and her last post was commanding the Air Force's 80th Flying Training Wing.

Buttons, buttons everywhere…

As I found out firsthand a few years ago in the Navy's F/A-18 simulator at NAS Oceana, a fourth-generation jet fighter like the F-15C is typically equipped with a mish-mash of '70s- and '80s-era screens and buttons, with other more current-looking '00s-era controls shoehorned into the corners. This reflects the fact that fighters like the F-15C and its contemporaries are mostly products of the 1970s, with more modern improvements bolted on over time.

Our California ANG F-15C is no exception, and Col. Themely spends a lot of the video explaining the physical controls in the cockpit—switches and levers that actuate functions that on a more modern fifth-generation fighter might instead be primarily accessed via touchscreen.

The amount of controls to address might appear overwhelming, but there's a secret to aircraft cockpits—you tend to only care about a few things at any given moment, so once you're familiar with the instruments, you focus on what you need and ignore the rest. It's the exact same thing people do when driving a car or operating any complex piece of machinery.

For our next trick

We're really excited about the possibilities of "Human Interface" as a series, and we have *many* more cool machines we'd like to see explained like this. Airliners, submarines, huge earth moving machines, power plants, giant car-eating dinosaur monster trucks—we've got a long list of stuff we're trying to get in to see, and if you have any suggestions,

please feel free to leave them in the comments.

My personal bucket list item for the series would be to have some Apollo-era flight controllers walk us through NASA’s restored Mission Operations Control Room 2 in Houston, but since its multi-million dollar restoration, NASA has been reticent to allow any filming on the floor of MOCR2. We’ll definitely keep asking!

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