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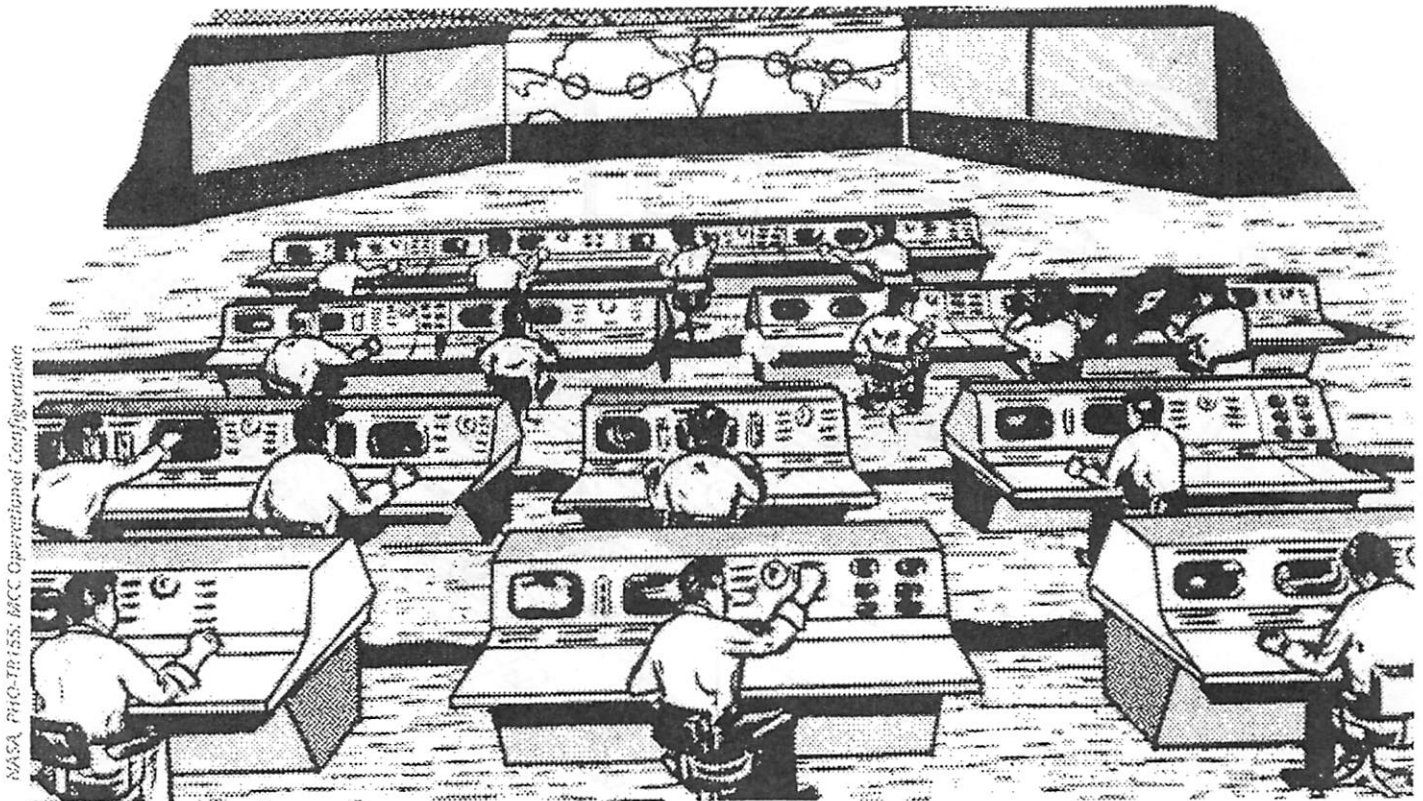
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SCIENCE —

Apollo Flight Controller 101: Every console explained

Your handy reference to each station in the Apollo Mission Control room.

LEE HUTCHINSON · 10/31/2012, 8:49 PM



NASA, PHO-TR-155: MOCR Operational Configuration

Ars recently had the opportunity to spend some quality time touring the restored Apollo "Mission Control" room at the Johnson Space Center in Houston, Texas. We talked with Sy Lieberget, a retired NASA flight controller who took part in some of the most famous manned space flight missions of all time, including Apollo 11 and Apollo 13. The feature article "Going boldly: Behind the scenes at NASA's hallowed Mission Control Center" goes in depth on what "Mission Control" did during Apollo and how it all worked, but there just wasn't room to fit in detailed descriptions and diagrams of all of the different flight controller consoles—I'm no John Siracusa, after all!

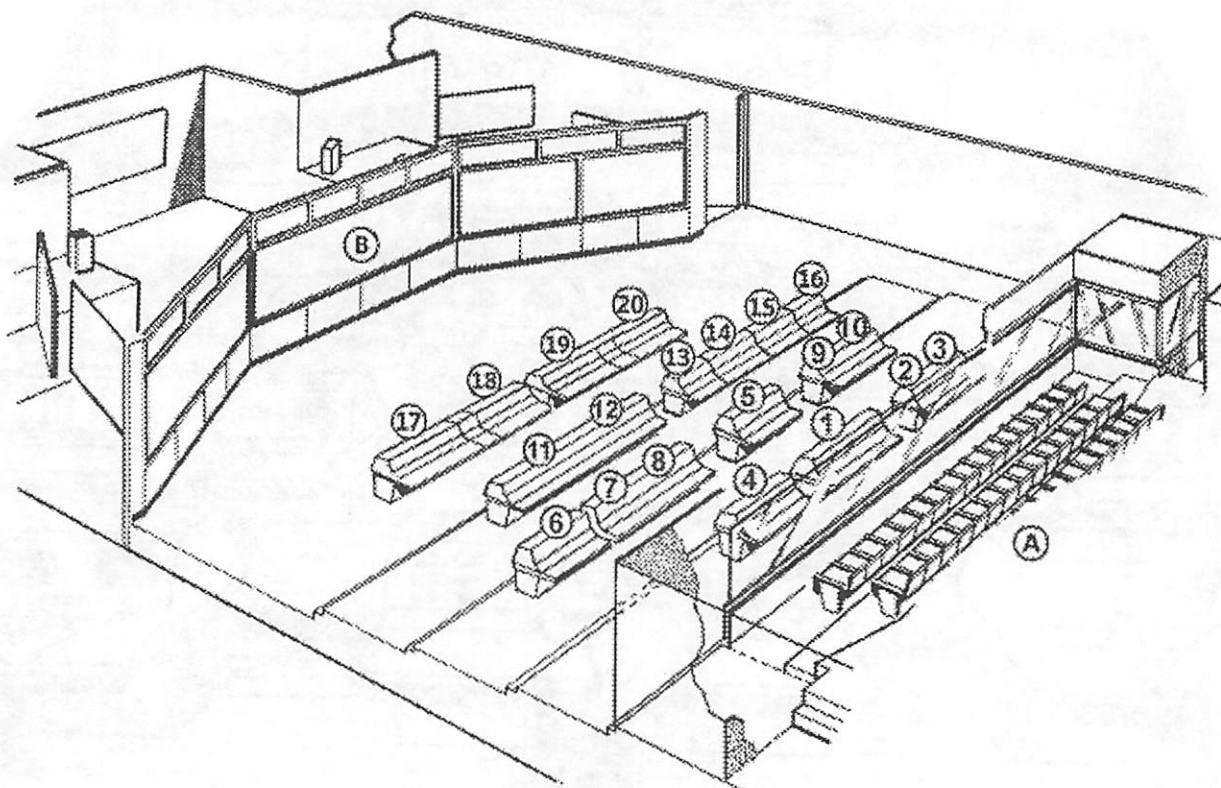
But Ars readers love space, and there was so much extra information that I couldn't sit on it. So this is a station-by-station tour of Historical Mission Operations Control Room 2, or "MOCR 2." As mentioned in the feature, MOCR 2 was used for almost every Gemini and Apollo flight, and in the late 1990s was restored to its Apollo-era appearance. You can visit it if you're in Houston, but you won't get any closer than the glassed-in visitor gallery in the back, and that's just not close enough. Strap yourselves in and prepare for an up-close look at the MOCR consoles, Ars style.

The layout

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The layout

For most of Project Apollo, MOCR 2 had a fixed layout. Each station handled a specific, related group of functions; some watched over the spacecraft's hardware, or its software, or its position in space, or over the crew itself. Here's how things were laid out for most of Project Apollo:



B: Display and projection area

Fourth row, "The Trench"

- 17: BOOSTER - Booster Systems Engineer
- 18: RETRO - Retrofire Officer
- 19: FDO - Flight Dynamics Officer
- 20: GUIDO - Guidance Officer

Third row:

- 1: SURGEON - Life Systems Officer/Flight Surgeon
- 12: CAPCOM - Capsule Communicator
- 13: EECOM - Electrical, Environmental, and Communications
- 14: GNC - Guidance, Navigation, and Control
- 15: TELMU - Telemetry, Electrical, and EVA Mobility Unit (LM EECOM)
- 16: CONTROL - LM Guidance & Navigation

Second row:

- 6: INCO - Instrumentation and Communications Officer
- 7: O&P - Operations and Procedures
- 8: AFLIGHT - Assistant Flight Director
- 9: FLIGHT - Flight Director
- 9: FAO - Flight Activities Officer
- 10: NETWORK - Network Controller

First row:

- 4: PAO - Public Affairs Office
- 1: DFO - Director of Flight Operations
- 2: HQ - NASA headquarters (Mission Operations Directorate)
- 3: DOD - Department of Defense

A: Glass fronted viewing room seating 74 authorized visitors

NASA/Aurich Lawson

Enlarge / MOCR 2's layout through most of Project Apollo.

Projection screens

APOLLO MOON PROJECT QUESTIONS

What do the initials NASA stand for?

Have you seen the movie, "Hidden Figures"?

How tall was the Saturn rocket?

How heavy was it?

How many rocket stages were there?

How many rocket engines in the 1st stage?

How large was each 1st stage engine?

Approximately how far is the moon from the earth?

How many landings on the moon?

How was the Apollo spacecraft recovered when it returned to earth?

What were the names of the space programs that came before Apollo?

If I drop a feather and a hammer from the same height, which hits the floor first?

These are notable "space dates". What occurred on each date?

October 4, 1957

May 5, 1961

February 20, 1962

July 20, 1969

What's the recipe for chocolate spiders?