

The **Necessities** of Life in Space

Space isn't exactly the most hospitable place to be: no air, zero gravity, a sunrise every 90 minutes and temperature extremes. It's a challenge humankind has faced since the first space travelers went into orbit nearly 50 years ago. As humans have spent more time in space, they have developed ways to make themselves at home there.

Food

One of the essential needs — the need to eat — requires creativity and problem-solving in zero gravity. It also requires planning to make sure space shuttle astronauts have enough food stowed for their two-week journey and reserves in case the shuttle's landing is delayed.

As a result, astronaut menus are planned in full for the entire flight. Space travelers attend a food tasting session months beforehand to help fill out their menus. But astronauts can't just pick out their favorite foods in space — no gorging on junk food is allowed. Their personal menus are approved by a dietitian to ensure they are nutritious enough for a busy workday.



Photo courtesy of NASA

Eric Boe participates in a food tasting session in the Flight Projects Division Laboratory at Johnson Space Center.

There is no dishwasher or kitchen sink. Therefore, food containers are disposable, and eating utensils and trays are cleaned using moist sanitizing towelettes.

Food aboard the shuttle is prepared in the galley, a modular unit that heats and rehydrates food and beverages.

cloths, one for washing and one for rinsing, and a rinseless shampoo. Water and soapsuds stick to the skin in weightless conditions, and excess water is suctioned into a wastewater tank. Toothpaste can be either swallowed or sucked out.

Lavatory

The toilet is composed of a toilet bowl and urine funnel. To use the toilet, astronauts must employ leg restraints and thigh bars. The toilet works like a vacuum cleaner with fans that suck air and waste into the commode. ▲

Sleeping

Of course, a typical bed is out of the question because there's no gravity to hold it or the sleeper down. To keep from floating around and bumping into things while asleep, an astronaut sleeps in a compartment tethered to the wall of the craft, like a cocoon in which he zips himself. The crew typically gets eight hours of sleep time after a 16-hour mission day.

Hygiene

Astronauts keep themselves clean in space with the use of special soap. They take sponge baths daily, using two wash-

Boe's Thanksgiving Day Menus

Meal A

- Oatmeal with brown sugar (rehydratable)
- Dried peaches (intermediate moisture)
- Blueberry-raspberry yogurt (thermostabilized)
- Clif bar, cool mint chocolate (natural form)
- Metamucil wafers, cinnamon (natural form)
- Orange-mango drink (beverage)
- Kona coffee with cream and sugar (beverage)

Meal B

- Crawfish etouffee (thermostabilized)
- Peanut butter (fresh food)
- Grape jelly (thermostabilized)
- Two tortillas (fresh food)
- Trail mix (intermediate moisture)
- Banana pudding (thermostabilized)
- Two lemonades (beverage)

Meal C (Thanksgiving meal)

- Smoked turkey (irradiated)
- Candied yams (thermostabilized)
- Green beans and mushrooms (rehydratable)
- Cornbread dressing (fresh food)
- Cranapple dessert (thermostabilized)
- Tea with sugar (beverage)