

# Mercury

In the early days of the space program, known as Project Mercury, space flights lasted from a few minutes to a full day. Because of the short duration, complete meals were not needed. The major meal was consumed prior to the flight. However, the Mercury astronauts did contribute to the development of space food. They tested the physiology of chewing, drinking, and swallowing solid and liquid foods in a microgravity environment. These first astronauts found themselves eating bite-sized cubes, freeze-dried foods, and semi-liquids in aluminum toothpaste-type tubes. The food was



**Early Project Mercury flight food: food tube and dry bite-sized snacks with a gelatin coating, which was necessary to control crumbling.**

unappetizing, and there were problems when they tried to rehydrate the freeze-dried foods.

The tube foods offered many challenges to food development. First, a method of removing the food from the tube was needed. A small straw was placed into the opening. This allowed the astronauts to squeeze the contents from the tube directly into their mouths. This is similar to drinking your favorite soda from a straw, except that the food was a thicker substance. Special materials were developed to coat the inner surface of the aluminum tubes to prevent the formation of hydrogen gas as a result of contact between metal and the acids contained in some foods, such as applesauce. This aluminum tube packaging often weighed more than the food it contained. Because of this, a lightweight plastic container was developed for future flights.

During the later Mercury test flights, bite-sized foods were developed and tested. These were solid foods processed in the form of compressed, dehydrated bite-sized cubes. The cubes could be rehydrated by saliva secreted in the mouth as food was chewed. Foods floating about in a microgravity environment could damage equipment or be inhaled; therefore, the cubes were coated with an edible gelatin to reduce crumbling. These foods were vacuum-packed into individual serving-sized containers of clear, four-ply, laminated plastic film for storage. This packaging also provided protection against moisture, loss of flavor, and spoilage.

