

FEATURE



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SPECIAL

MOON SUITS

America's first men on the Moon will wear a bulky snowsuit-like garment and a backpack that make walking and working difficult but protect them against hazards unknown on Earth.

The Extravehicular Mobility Unit, as it's called, amounts to a one-man spacecraft. It provides an atmosphere for breathing and pressurization, a communications link, and protection against heat, cold, meteoroid particles, and solar radiation.

The complete 183-pound outfit will weigh the equivalent of only 30 1/2 pounds in the Moon's reduced gravity. But in the lunar vacuum the suit tends to retain its fullest shape, like a balloon, and resist bending at the joints.

The basic pressure garment consists of a nomex comfort layer, a neoprene-coated nylon pressure bladder, and a nylon restraint layer. This is topped by a thermal-meteoroid cover consisting of a liner of two layers of neoprene-coated nylon, seven layers of Beta/Kapton laminate, and an outer layer of Teflon-coated Beta fabric.

The cover is designed to protect against temperatures from 250 degrees above to 250 degrees below zero Fahrenheit and micrometeorites traveling at speeds up to 64,000 miles an hour.

Over a soft communications helmet the astronauts wear a transparent bubble helmet and an extravehicular visor to shield their eyes from the Sun's ultraviolet, infrared, and visible light. Insulated gloves and 33-layer lunar overshoes protect their hands and feet.

Under the suit is a cooling garment of knitted nylon-spandex with a network of plastic tubing through which water is circulated from a 70-pound backpack called the Portable Life Support System.

The backpack also supplies oxygen for up to four hours, plus a 30-minute emergency supply, and contains communications and biotelemetry equipment and batteries.