

Apollo Moon Suit

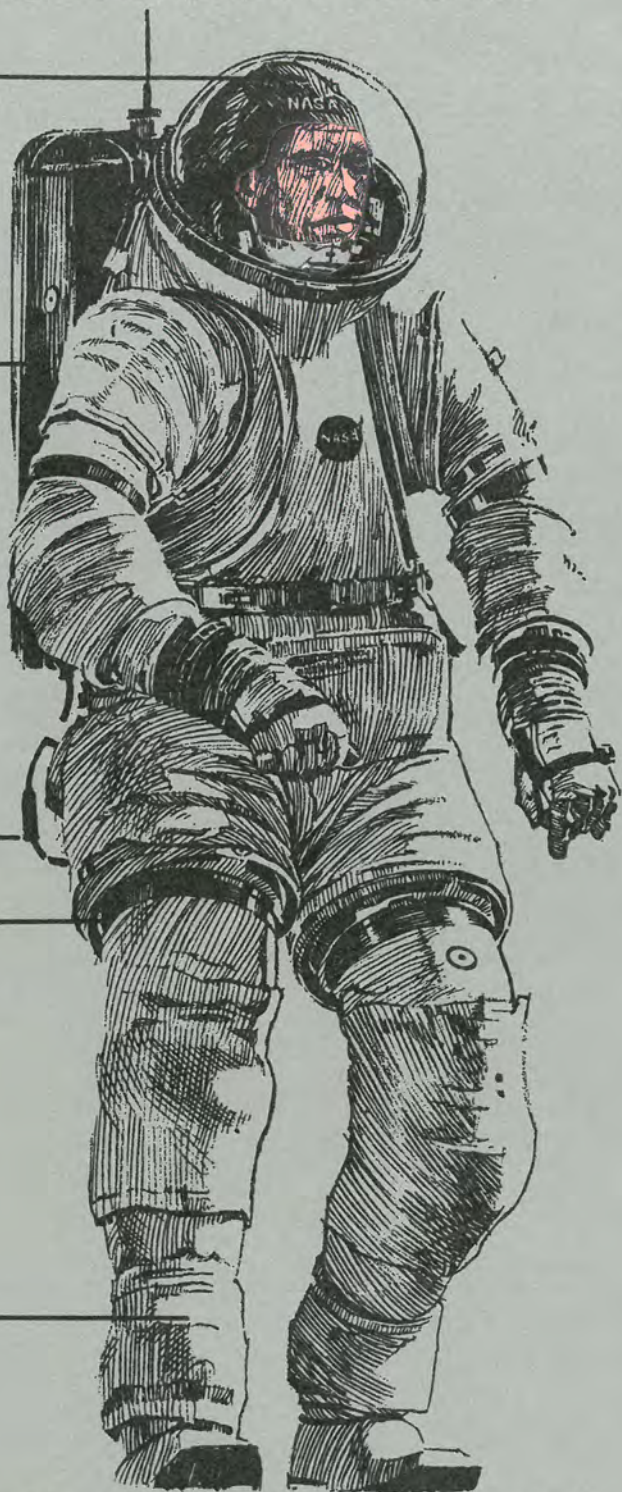
Flight cap, beneath helmet, containing earphones and microphone

Life support pack

Jack-plug for radio connection to Life support pack

Flexible metal unions to aid movement at shoulders, wrists, ankles, etc.

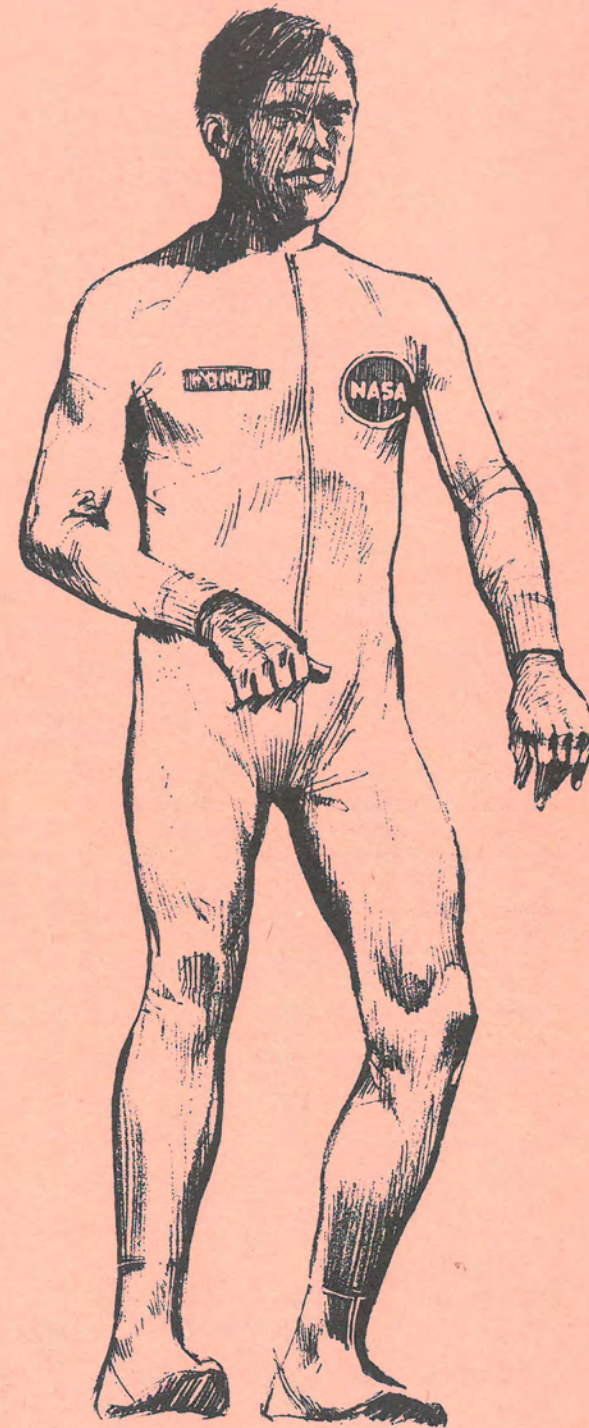
Extra sleeves at knees, ankles, elbows to protect against abrasive lunar rock



PREPARING to walk on the Moon's surface, astronaut wears basic pressure suit minus the Beta fabric covering (see *Pressure Suit*). He wears his Life support pack on his back. Over this and over his entire suit and all helmet except frontal area, he will wear a light coverall (*he can be seen wearing this in Item 7*). It will be put on before leaving the Lunar Module and is for protection against the sun's heat and light meteorite penetration.

The transparent helmet is coated with gold leaf to cut down sun glare.

Flight Suit



BASIC GARMENT worn by Apollo astronauts is this one-piece flight suit individually tailored for each crew member. It is made from a nylon-type material called "Beta fabric" and worn next to the skin throughout the mission.

During the long coasting periods to and from the Moon, the astronauts will, by turns, strip off their pressure suits and relax in 'shirtsleeve' comfort in the flight suits. Adequate temperature, oxygen supply and atmospheric pressure will be maintained automatically in the cabin. (See 'Staying Alive' — and explanation of the Environmental Control Unit — on reverse.)

Apollo Pressure Suit

Apollo Briefing
ITEM 3



Helmet with gold-leaf coating

Lead for monitoring body temperatures, pulse, respiration.

Two-way radio connections are at back of suit

Oxygen inlet and outlet tubes

Protective metal-fibre patches at knee, elbow, spine, shoulder blades

ASTRONAUT wearing over his flight suit a pressure suit, and over that a coverall of nylon Beta fabric proofed against accidental cabin fire or excessive heat during re-entry into Earth's atmosphere. He will be dressed like this during pre-launch, lift-off and re-entry into Earth's atmosphere.

Four fabric layers make up the pressure suit – nylon link-net for basic strength; airtight rubber for pressure retention; a fabric 'comfort layer' with heat-loss properties; and an outer layer of nylon with a metal-like finish.

STAYING ALIVE

TO LIVE and function well, man requires five essential conditions in his environment.

1. An adequate atmospheric pressure (14.7 lb. a square inch). 2. Body temperature must be kept very close to 98.6°F. 3. Oxygen. Five minutes without oxygen is DEATH. 4. Water. 5. Food.

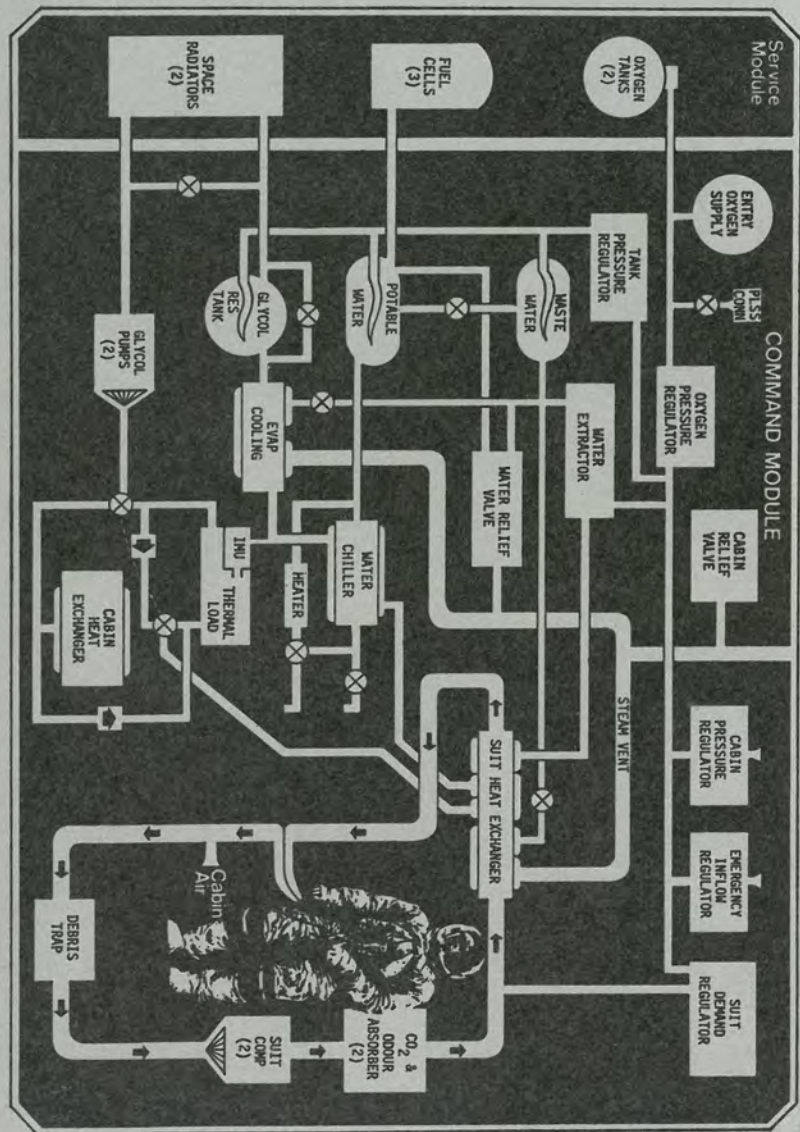
On Earth these conditions are abundantly available. In the hostile conditions of space, man must maintain mechanically an environment like the one to which he was born.

This is a function of the Command Module and the Lunar Module – the cabin of either module can provide all five of the essentials. The pressure suit provides the first three of the five. Oxygen, pressure and temperature are controlled or provided automatically by the pressure suit. It also removes excessive moisture, exhaled carbon dioxide and urine.

When, during parts of the flight the astronaut wears only the flight suit, he is supported directly by the cabin atmosphere and breathes oxygen from it. When he wears his pressure suit with helmet closed, he is independent of the cabin's atmosphere and is plugged into Apollo's Environment Control Unit which duplicates the cabin atmosphere inside his suit. This is true in either the Command Module or the Lunar Module, which also carries an Environment Control Unit.

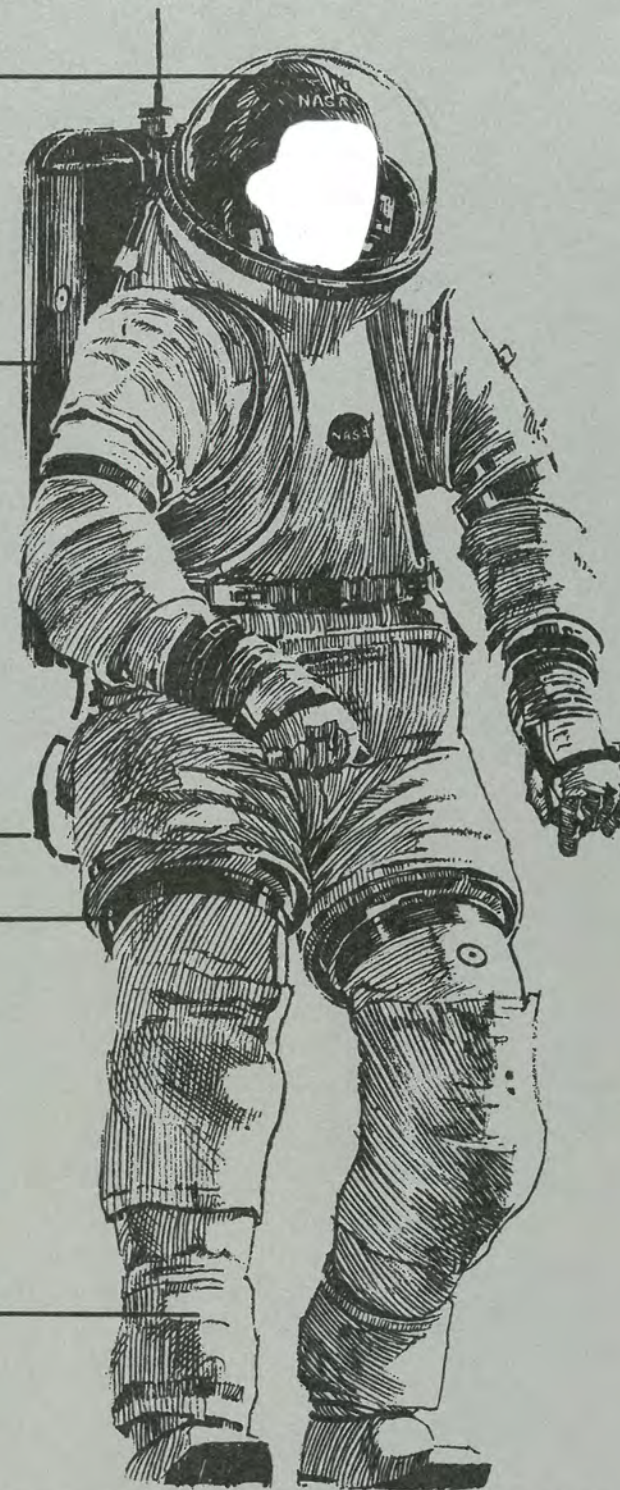
But when the astronaut, wearing his excursion suit, steps out on to the Moon's surface, the atmosphere in his suit is created and controlled by the Life Support Pack he carries on his back, which is a smaller, simplified version of the ECU, plus two-way radio and facility for measuring radiation dosage.

Diagrammatic layout of the ECU (right) shows the systems needed to keep man alive in space. Food and water supplies are dealt with in Item 4.



© Copyright GEMINISCAN LTD 1969

Apollo Moon Suit



Flight cap, beneath helmet, containing earphones and microphone

Life support pack

Jack-plug for radio connection to Life support pack

Flexible metal unions to aid movement at shoulders, wrists, ankles, etc.

Extra sleeves at knees, ankles, elbows to protect against abrasive lunar rock

PREPARING to walk on the Moon's surface, astronaut wears basic pressure suit minus the Beta fabric covering (see *Pressure Suit*). He wears his Life support pack on his back. Over this and over his entire suit and all helmet except frontal area, he will wear a light coverall (he can be seen wearing this in Item 7). It will be put on before leaving the Lunar Module and is for protection against the sun's heat and light meteorite penetration.

The transparent helmet is coated with gold leaf to cut down sun glare.