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EXTRA-VEHICULAR EQUIPMENT (Case V)  
& Hand Held Maneuvering Unit

The Extra-Vehicular Life Support system shown in Case V is actual flight equipment as used for the extra-vehicular activities carried out on GEMINI flights XI and XII.

GEMINI XI was flown by Astronauts Charles Conrad Jr. and Richard F. Gordon, Jr. The 33-minute umbilical EVA on this mission was carried out by Astronaut Gordon.

The final and highly successful mission of the Gemini Program was GEMINI XII flown by Command Pilot James A. Lovell Jr. and Pilot Edwin E. Aldrin Jr. Pilot Aldrin set a space record for EVA on this flight of a total five hours and 26 minutes. He performed a two hour 27-minute standup EVA; a two hour and 8-minute umbilical EVA and another 51-minute standup EVA.

To perform EVA, the astronaut is equipped with the Extra Vehicular Life Support System (ELSS) shown in this case. The chest pack is the central component of the life support system. This system is primarily designed to provide a controlled environment to an astronaut functioning outside his spacecraft. The entire ELSS consists of the chest pack, an electrical jumper cable, two dual-line pneumatic connectors, and a 25-foot umbilical cord containing an electrical connector, and a tether hook at each end.

When in use, the chest pack is positioned on the astronaut's chest (occupying an area from above the thighs to below the chin), and the control panels are readily visible and accessible to the user. The chest pack is held in place by a self-adhering web belt on the customer-furnished

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suit. The belt ends are laid across strips of the same self-adhering, web-belt material affixed to the back of the chest pack. Electrical connections to the chest pack are made through the electrical jumper cable to the spacecraft and suit via the 25-foot umbilical cord. The external oxygen supply to the chest pack is pneumatically connected through the same umbilical cord used for electrical connection. Controlled oxygen is routed between the chest pack and suit through the two dual-line pneumatic connectors.

The hand-held Maneuvering Unit SN-102 is similar to the one used successfully by Astronaut Michael Collins, pilot of Gemini X, July 18-21, 1966, to transfer in both directions between the spacecraft and the Agena VIII target vehicle, a distance of about 15 feet. Collins also retrieved an experiment package which had been attached to the Agena VIII since March 16.