

II. Apollo 15 vs. Apollo 16

A. Summary

Changes from the Apollo 15 hardware were brought about primarily from recommendations of both the Apollo 15 and Apollo 16 crews. Also, some recharge procedure changes were made in order to receive a more complete recharge while at the same time making the procedures less difficult to follow.

B. Specific Changes

1. Dust Covers on Electrical, Water, and OPS O₂ Connectors

The Apollo 15 crew commented that the thermal "booties" on the PLSS O₂ connectors did a good job of keeping the connectors clean. They recommended that covers be added to the remaining connectors, (PLSS electrical and H₂O and OPS O₂). Dust cover "booties" have been added to these connectors.

2. PLSS Oxygen Ground Charge Increased

The ground charge of the PLSS oxygen tank prior to flight has been increased from 1440 psia (1.77 pounds) to 1510 psia (1.86 pounds) in order to make a greater quantity of oxygen available for EVA I. The recharges for EVA II and III remain unchanged and the pressures are governed by the LM regulator.

3. Feedwater Tanks Charged Prior to Flight

For Apollo 16, the PLSS Feedwater tanks were charged on the ground prior to flight instead of being flown empty as in Apollo 15. This eliminated the need for the crew to charge the tanks prior to EVA I.

4. Recharge Procedures Changes

In order to obtain a greater quantity of consumable oxygen for EVAs II and III, an additional top off of 1 minute duration prior to the EVA has been added. The initial 4 minute charge and 10 minute top off have remained unchanged.

The feedwater recharge procedure has been modified to delete the opening and closing of the LM Descent H₂O valve prior to connecting to and disconnecting from the PLSS connectors. Also, reference to the feedwater "sight glass" has been deleted in order to simplify the procedure and eliminate the confusion which the "sight glass" brought about. Copies of both the Apollo 15 and Apollo 16 recharge procedure are attached. Reference pages 23 and 24.

5. PLSS H₂O Hose Length Change

The length of the PLSS H₂O hose was increased by 3 inches in order to make it easier to connect to the PLSS and/or BSLSS.

6. OPS Antenna Protective Flap Addition

Protective flaps which completely cover the antenna have been added to the OPS thermal cover in order to protect the antenna from damage while egressing or ingressing the LM. Procedures have been modified to keep the antenna stowed on egress until on the lunar surface and to stow it prior to ingressing the LM.

7. OPS CDR Red I.D. Stripes

Two vertical red stripes have been added to the back of the CDR's OPS thermal cover in order to aid in identification.

8. Weight Change

The Apollo 16 configuration PLSS, RCU, and OPS weigh 135 pounds. This is 2 pounds heavier than the Apollo 15 configuration.