Ares Upper Stage (US)

Manufacturing and Assembly Subsystem: Due to first-bond defects found in the Common Bulkhead Manufacturing Demonstration Article (CBMDA), the Upper Stage Element has begun a repair development effort to address the entire CBMDA manufacturing process. Engineers in the EM lab have made development panels to help with common bulkhead first-bond honeycomb repair. These panels were made to establish the repair technique before transferring the process to the CBMDA. On the first panel, the repair honeycomb is flush with the acreage. The second panel has raised repairs, and the third panel will have repairs on a curved panel.

Figure 1 – First repair honeycomb flush with the acreage.

Figure 2 – Second repair honeycomb with raised repairs.

Figure 3 – Third repair honeycomb on a curved panel.

In each case, the original honeycomb was cut and pulled, and the surface sanded out to expose the metal surface for re-bonding in order to receive a new honeycomb piece. To cure the repairs, each whole panel was baked in a curing oven in MSFC Building 4707. This curing process will also be done on the CBMDA, which will see three curing cycles instead of two.

The Ares Projects look forward to the launch of STS-133, Space Shuttle Discovery, on November 1.

Have a safe and happy Halloween!