LACH HONORED FOR CONTRIBUTIONS TO SHUTTLE REDESIGN

Cynthia L. Lach, Materials Division, NASA Langley Research Center, has been selected a Manned Flight Awareness (MFA) honoree and will participate in an honoree event at the Kennedy Space Center, Florida, during the week of November 14.

The MFA program honors employees who have performed exemplary work in support of the Space Shuttle program and other manned space flight-related assignments. Richard H. Truly, associate administrator for Space Flight, regards the MFA honoree award "as one of the highest and most prestigious awards available to employees of the NASA/industry Shuttle/payloads team."

Lach, aerospace engineer, Mechanics of Materials Branch, was selected "for investigating the sealing characteristics of the Space Shuttle Solid Rocket Booster field joint O-rings" and was nominated by Charles P. Blankenship, director for Structures. "Lach has made substantial contributions to the Shuttle SRB field joint redesign project by establishing critical O-ring sealing parameters," said Blankenship.

Lach began her career with NASA in September 1986 and was promoted to her present position in January 1988. Her research has focused on identifying the gap opening rates and temperatures under which candidate O-ring materials will maintain a seal during simulated Shuttle launch conditions.
Due to the rougher surface finishes of the redesigned O-ring glands, Lach examined the effects of temperature and structural vibrations on the sealing performance of the O-rings. During the latter stages of the redesign project, she conducted contaminated seal tests on a unique 1/4-scale bore seal fixture, designed at Langley by Dr. Wolf Elber and Mickey Gardner. These tests verified that the redesigned leak check procedure, used after the field joint assembly, can detect contaminants as small as 0.001 inch. Her tests determined that cleanliness is critical for sealing performance. The O-rings are now installed in a "clean room" environment to ensure that threads from clothing or human hairs will not result in a localized leak during launch.

Lach received a bachelor of science degree in metallurgical engineering from Iowa State University in 1984. She is a member of the American Society of Metals and serves as membership chairman.

She is a resident of Hampton, Va.