3M, Lockheed Martin/Aircraft Film Appliques

3M Corp. is working with Boeing and Lockheed Martin to develop appliques that could replace paint on the next-generation Joint Strike Fighter. The technologies developed for the JSF also could be used on both military and commercial aircraft of the present and future.

While the cost of the fluoropolymer films may be higher than that of paint, the life-cycle costs promise to be significantly lower. The appliques can be applied in any hangar or even outdoors. Removal of paint also is fraught with the problems of use and disposal of hazardous chemical strippers. The manually-removed appliques can be sent to a landfill.

Lockheed Martin is evaluating the film technology on three aircraft, an F-16 at Edwards AFB, Calif., a Navy S-3 that was deployed on the USS George Washington to the Persian Gulf and a C-130 at Keesler AFB, Miss., said William Campbell, the company's manager for the film technology program. The F-16, which has appliques on the forward half of the fuselage, has flown at up to Mach 1.4 (*AW&ST* Nov. 3, 1997, p. 19).

The initial coating on the S-3 was stripped so it could be inspected for corrosion. Then another film was applied before the cruise on the Washington. The C-130, the first Lockheed Martin aircraft with a pressurized fuselage to receive the coating, has accumulated 227 hr., Campbell said. The applique covers a 1,600-sq.-ft. area. Boeing used advanced appliques on an F/A-18B and a T-33 as part of its JSF work (*AW&ST* June 9, 1997, p. 72). 3M's program director for aircraft appliques, Steve Speech, said the Lockheed Martin and Boeing appliques, while similar, use slightly different technology.