

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: September 24, 1981

 Forwarded to:

Honorable J. Lynn Helms
 Administrator
 Federal Aviation Administration
 800 Independence Avenue, S.W.
 Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-81-121

On August 7, 1980, a Convair 580, operated by Interstate Airlines, was on a regularly scheduled cargo flight when the nose gear failed to extend as the flight-crew prepared for landing. After several attempts to extend the nose gear, the flight returned to Logan International Airport, Boston, Massachusetts, and made an emergency landing with the nose gear retracted. The three crewmembers were not injured, but the aircraft was slightly damaged.

Postaccident inspection of the nose gear revealed that the right nose gear door hinge had failed and caused the right door to jam against the left door. The jammed doors prevented the nose gear from extending in flight.

Metallurgical examination of the hinge by the National Transportation Safety Board indicated that the failed hinge was fractured and that the fracture was typical of overstress separation in aluminum alloys. The source of the overstress forces is currently undetermined; however, there were significant deposits of rust which may have created high frictional loads located around the hinge bushing hole. The hinge bushing and pivot bolt were noticeably dry of any lubricants and did not appear to have been regularly lubricated.

A review of the lubrication section of the manufacturer's maintenance manual for the Convair 580 indicated that the nose gear door hinge bushings were impregnated with MIL-L-7870 oil at the time of installation and that they should be relubricated with the same oil during major inspections. However, the Interstate Airlines CV-580 maintenance manual, approved by the Federal Aviation Administration (FAA), and the Allegheny Airlines CV-580 airframe overhaul manual, which is used by Interstate Airlines, do not address this requirement nor provide instructions on lubrication of nose gear door hinge bushings.

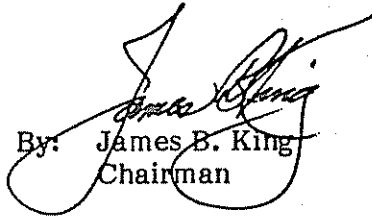
A review of the FAA's Service Difficulty Reports for the last 5 years revealed one other incident in which the nose gear door hinge on a Convair 340 failed. The Convair 240, 340, 440, and 580 landing gear systems are similar.

The Safety Board is concerned that the maintenance manuals of other Convair 240, 340, 440, and 580 operators may not include the lubrication requirements for nose gear door hinge bushings. Inclusion of this information could prevent further gear-up landings caused by jammed doors.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Issue a maintenance bulletin to notify Convair 240, 340, 440, and 580 inspectors, operators, and owners that, at major inspections, the nose gear door hinge bushings should be lubricated with MIL-L-7870 oil according to the manufacturer's maintenance manual. (Class II, Priority Action) (A-81-121)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.


By: James B. King
Chairman