Lg 1458 AI-4

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: April 23, 1982

Forwarded to:

Honorable J. Lynn Helms
Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

A-82-40 and -41

On April 16, 1982, a Bell 222 Helicopter, N2152J, crashed and burned near Hinton, Oklahoma. The pilot and two passengers were killed. Eyewitnesses reported that the helicopter's tail boom and other large components separated during cruise flight. The tail boom, main rotor system, and main transmission were found along the flightpath.

The Safety Board's on-site investigation revealed that one of the two main rotor blade flight control drive link assemblies had fractured. Preliminary metallurgical examination of the fractured surfaces indicated a fatigue present across about one-third of the cross-sectional area of the link assembly web. Which had been operating 115 hours at the time of the accident.

Discussions with Bell Helicopter personnel indicated that the configuration drive link assembly, PN 222-010-460-101, was installed on the first 79 aircraft produced. An improved design link assembly, PN 222-011-416-101, has been installed on subsequent aircraft. The design change was made to eliminate a service problem associated with rapid wear of the spherical ball located at the base of the drive link.

Based on the initial metallurgical findings of fatigue, the Safety Board believes that other Bell 222 model helicopters which have the PN 222-010-460-101 drive link assemblies installed may be operating with web cracks beneath the painted surface which are not detectable while conducting the existing daily and periodic inspection requirements and that this potential safety hazard should be eliminated.

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

> Issue an emergency Airworthiness Directive for Bell Model 222 helicopters to require removal and an immediate one-time fluorescent dye penetrant inspection of the drive link assembly PN 222-010-460-101 installed on applicable aircraft, and establish a frequent detailed inspection based on operating hours. (Class I, Urgent Action) (A-82-40)

Require that the improved drive link assembly, PN 222-011-416-101, be installed on applicable Bell Model 222 helicopters as soon as parts from the manufacturer are available. (Class II, Priority Action) (A-82-41)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS and BURSLEY, Members, concurred in these recommendations.

By: Jim Burnett
Chairman