

Safety Recommendation A-68-1

The National Transportation Safety Board (NTSB) issued Safety Recommendation A-68-1 to the Federal Aviation Administration on January 8, 1968, as a result of the NTSB's investigation of the December 13, 1967 fatal accident in Hanalei, Kauai, Hawaii. According to the NTSB's investigation, the accident helicopter, a Bell model 47J2A, N8501F, experienced fatigue failure in the tail rotor blade, which resulted in an inflight structural separation. Metallurgical examination of the fatigue fracture, which occurred near blade station 6.0, revealed that the origins of the fatigue cracks were on the inside surfaces of the blade shell midway between the trailing and the leading edges. These cracks propagated circumferentially around the blade root and were effectively hidden from any visual detection by the blade doubler straps for most of the fatigue crack progression. Airworthiness Directive 66-28-2, requiring a daily visual inspection of these areas, was being complied with. The text of Safety Recommendation A-68-1 is as follows:

The National Transportation Safety Board recommends an immediate x-ray inspection of all Bell 47 tail rotor blades and a continuing x-ray and visual inspection at prescribed safe intervals until the manufacturer can demonstrate a satisfactory solution for these tail rotor blade fatigue failures.

The following page provides more details regarding the subject accident.

NTSB Identification: OAK68A0050

14 CFR Part 135 Nonscheduled operation of KAUAI HELICOPT
 Aircraft: BELL 47J-2A, registration: N8501F

 FILE DATE LOCATION AIRCRAFT DATA INJURIES F
 LIGHT PILOT DATA F S M/N P
 URPOSE

2-1121 67/12/13 HANAIEI, HAWAII BELL 47J-2A CR-
 0 0 1 COMMERCIAL COMMERCIAL, AGE 23, 2200
 TIME - 1736 N8501F PX-
 2 0 0 AIR TAXI-PASSG TOTAL HOURS, 13 IN TYPE,
 DAMAGE-DESTROYED OT-
 0 0 0 NOT INSTRUMENT RATED.

NAME OF AIRPORT - HANAIEI PLANTATON
 TYPE OF ACCIDENT PHASE OF OPE

RATION PROPELLER/ROTOR FAILURE: TAIL ROTOR LANDING:

FINAL APPROACH COLLISION WITH GROUND/WATER: UNCONTROLLED IN FLIGHT
 : UNCONTROLLED DESCENT

PROBABLE CAUSE(S)
 ROTORCRAFT - ROTOR ASSEMBLIES: TAIL ROTOR BLADES
 MISCELLANEOUS ACTS, CONDITIONS - FATIGUE FRACTURE
 PERSONNEL - PRODUCTION-DESIGN-

PERSONNEL: SUBSTANDARD QUALITY CONTROL
 FACTOR(S)
 MISCELLANEOUS ACTS, CONDITIONS - SEPARATION IN FLIGHT
 FIRE AFTER IMPACT

REMARKS-
 MANUFACTURING DEFECT, LACK OF BONDING MATERIAL BETWEEN SHELL AND GRIP.