

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

FOR RELEASE: 6:30 A.M., E.D.S.T., SEPTEMBER 2, 1975

ISSUED: September 2, 1975

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Forwarded to:

Honorable James E. Dow  
Acting Administrator  
Federal Aviation Administration  
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-75-72 & 73

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Two recent helicopter accidents involving excessive rates of descent have demonstrated the need for corrective action to prevent similar accidents.

On November 7, 1974, an Aerospatiale Model SA-315B Lama helicopter, N13583, was involved in an accident shortly after takeoff from the airport at Springerville, Arizona. Evidence indicated that the aircraft contacted the ground at a high rate of descent and with very low main rotor rpm. The pilot, the only occupant, received fatal injuries. The National Transportation Safety Board's investigation revealed that the primary cause of this accident was contaminated fuel that caused the turbine engine to flame out during a critical phase of flight.

On September 7, 1974, an Aerospatiale Model SA-319B, Alouette III helicopter, PK-DAI, was involved in an accident approximately 3 minutes after takeoff from the Tanjung Harapan Heliport in Indonesia after the engine failed at an altitude of 700 feet. The International Civil Aviation Organization report indicated that the pilot-in-command executed a precautionary landing, but the landing was "heavy" and the helicopter was destroyed by fire. The pilot and three passengers received fatal injuries. Preliminary investigation revealed water in the fuel system.

An analysis of the 69 turbine-powered helicopter engine failure accidents that occurred in the United States during the years 1970 through 1974 has shown that 18 of these 69 accidents could possibly have been avoided if both visual and audible engine-out warning systems had been installed. The list of these 18 accidents is attached.


The relatively quiet turbine engines on helicopters can cease to operate without the pilot/crew detecting a difference in sound level. The Board believes that the requirements of 14 CFR 27.33(b)(3) and 14 CFR 29.33(b)(3) do not provide the pilots of turbine-powered normal and transport category helicopters with an effective means of detecting a turbine engine flame-out before a serious loss of main rotor rpm occurs.

Based upon the above information, the National Transportation Safety Board recommends that the Federal Aviation Administration:

1. Issue Airworthiness Directives to require the installation of both visual and audible engine-out warning systems on all turbine-powered helicopters. (Class II)
2. Amend 14 CFR Parts 27 and 29 to require that all turbine-powered helicopters be equipped with a prominent engine-out visual warning system and an audible warning system which can be heard with or without the use of a headset. (Class II)

Personnel from our Bureau of Aviation Safety will be available if any further information or assistance is desired.

THAYER, BURGESS, and HALEY, Members, concurred in the above recommendations. REED, Chairman and McADAMS, Member, did not participate.

  
By: John H. Reed  
Chairman

Attachment

THESE RECOMMENDATIONS WILL BE RELEASED TO THE PUBLIC ON THE ISSUE DATE SHOWN ABOVE. NO PUBLIC DISSEMINATION OF THE CONTENTS OF THIS DOCUMENT SHOULD BE MADE PRIOR TO THAT DATE.

TURBOSHAFT POWERED HELICOPTER ENGINE FAILURE ACCIDENTS

1970 - 1974

4/22/70	Saginaw, MI	Bell 206A	N4719R
7/11/70	Nr. Bay Shore, NY	Bell 206A	N4776R
12/13/70	Sommerset, PA	Bell 206A	N8172J
11/26/70	Cotati, CA	Hughes 369HS	N9017F
11/21/70	Plettnbrg Bay, AFR	Bell 206A	N7820S
1/13/71	Nr. Salt Lake City, UT	Bell 206A	N4047G
4/7/72	New York, NY	Bell 206A	N2224W
6/18/72	Digmans Ferry, PA	Bell 206A	N1494W
8/10/72	John Day, OR	Bell 206A	N209D
11/24/72	Mount Snow, VT	Bell 206A	N3527T
12/14/72	Nr. Chelan, WA	Sikorsky S-61A	N318Y (two fatalities)
8/22/73	Des Moines, IA	Bell 206A	N7068J
8/8/73	Nr. Hilo, HI	Aloutte II	N41171
9/18/73	Beltsville, MD	Bell 206A	N6294N (two fatalities)
10/16/73	Nr. Jayuya, PR	Sikorsky S-62A	N1166U
8/26/73	Paskwood, WA	Hughes 369HS	N9043F
6/21/74	Brooklyn, NY	Bell 206A	N4797R
10/15/74	Garden City, NJ	Bell 206A	N143Q

Note: Aircraft now equipped with visual and audible engine-out warning systems:

Bell Model 206: Factory installation on manufacturer serial No. 584 and subsequent. All others - optional.

Fairchild Hiller Model FH-1100: Factory installation on all aircraft.

Hughes Model 369: Factory installed in all models equipped with the Allison 250-C 20 engine. All others optional.

Boeing Vertol - Boelkow BO-105: All U. S. Models factory equipped.